



**ARCHITECTURE DEPARTMENT**

**CHINESE UNIVERSITY OF HONG KONG**

**MASTER OF ARCHITECTURE PROGRAMME**

**2002-2003**

**DESIGN REPORT**

**URBANIZATION IN RURAL AREA, BETWEEN  
INFRASTRUCTURE AND VILLAGE  
- LEISURE FARM HOUSE IN KAM TIN**

**CHEUNG Wai Hong     May 2003**



**Urbanization in Rural Area,  
between infrastructure and village  
- Leisure Farm House in Kam Tin**

**Thesis Report**

**Cheung Wai Hong  
Student No. 01167800  
Adviser : Professor Woo Pui Leng**

<b>Table of Contents</b>	<b>Page</b>
<b>01. Acknowledgement</b>	01
<b>02. Synopsis</b>	
a. Project Background	02
b. Thesis Statement	03
<b>03. Research</b>	
a. Study of the village	04
b. Impact of the urbanization to the village area	07
c. Existing condition of the area along railway (infrastructure)	08
d. Process of urbanization in the rural area	13
e. Condition of Kam Tin	16
<b>04. Planning Strategy</b>	
a. Analysis of Kam Tin	17
b. Proposal	19
<b>05. Precedent Studies</b>	21
<b>06. Design</b>	
a. Site	29
b. Design development at the massing scale	30
c. Program of detail design	33
d. Design development of detail design	34
<b>07 Final Design</b>	
a. Final Design at massing scale	44
b. Final Design of the detail part	47
<b>08. Bibliography</b>	56



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And the M Arch 2 Classmates in 2003-2004



Project Background

Rural village settlement in New Territories is our special heritage. As Hong Kong is a highly urbanized city with lots of high rise buildings and infrastructure. This type of alternative living style has a great contrast with the highly urbanized style of living in the city. However, due to the rapidly New Town Development as urbanization process, lots of infrastructures are constructed as the access point from the New Town to the inner city. Some of the infrastructure are built in the remote area without settlement, but some of it are built in the area which is very close to the village settlement. In this case, those infrastructure will bring the tremendous impact and change the profile of existing rural settlement. Kam Tin is one of the local village under such impact directly by the railway and highway development on the surrounding area.

02. Synopsis  
a. Project Background

Original settlement pattern  
in village of NT



Infrastructure cut across  
the rural area without settlement





Thesis Statement

When we look at **Kam Tin** in section, a typical case can be found

Infrastructure - **lost space** - Villages settlement

My thesis is to study and **UNDERSTAND** the relationship between the infrastructure and the village settlement.

A proposal / suggestion of an architectural treatment will be made to the **lost space** for the goodness of both the local resident with their unique heritage and nowadays urban development in Hong Kong. )

The aforementioned **lost space** usually happen along the **EDGE** or say, the physical boundary of the village defined by the traffic network or the adjacent new developed urban areas. It becomes critical for the properties and usage of such area to act as a **buffer zone** between the 2 co-existence different areas. A specified architectural treatment / solution is to be proposed in such area in response to its unique context instead of neither the traditional local dwelling nor the totally new urban development which is in little response to the local dwelling environment.)

02. Synopsis  
b. Thesis Statement



Lost space defined by the infrastructure

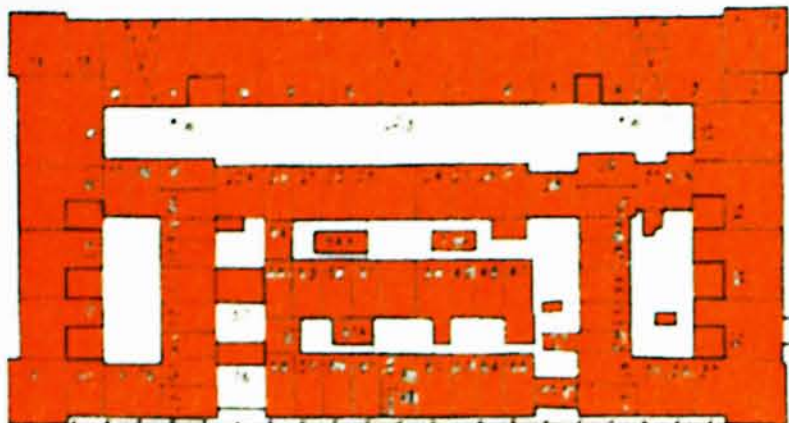


Study of the village

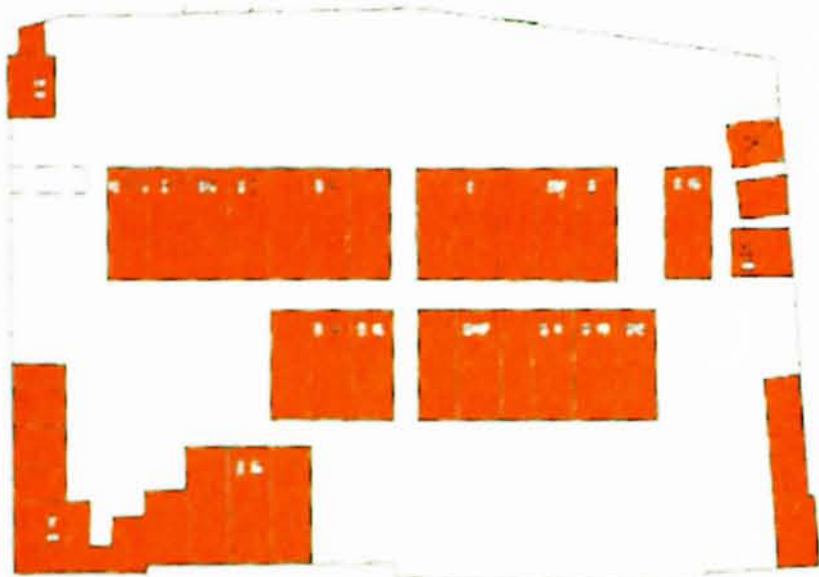
The study of the village is essential to understand the nature of the village.

1. Types of the village houses

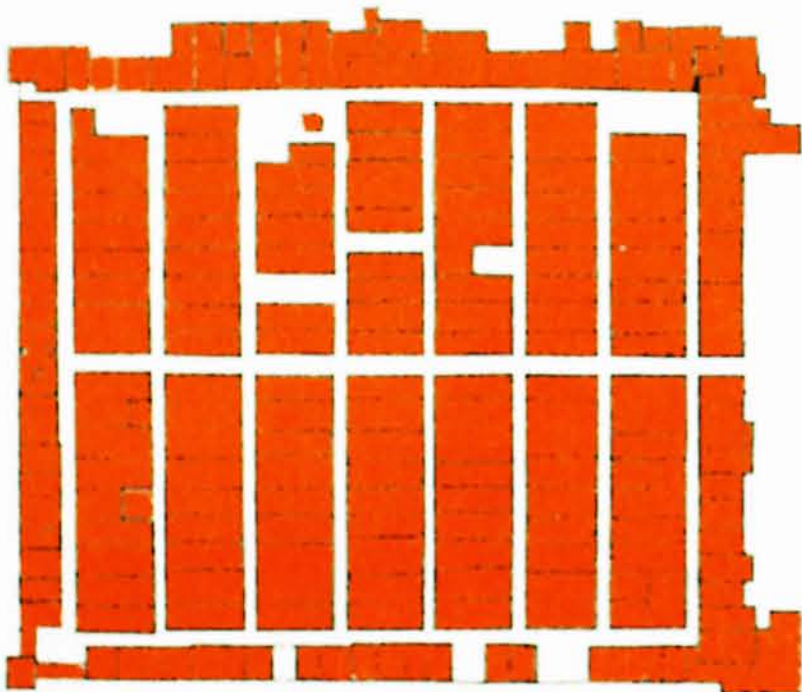
Type 1 Wai (Wall House)



Type 1 a  
Wai with courtyard  
house layout



Type 1 b  
Wai with wall enclosure  
(not the living units  
surrounded)



Type 1 c  
Typical Wai



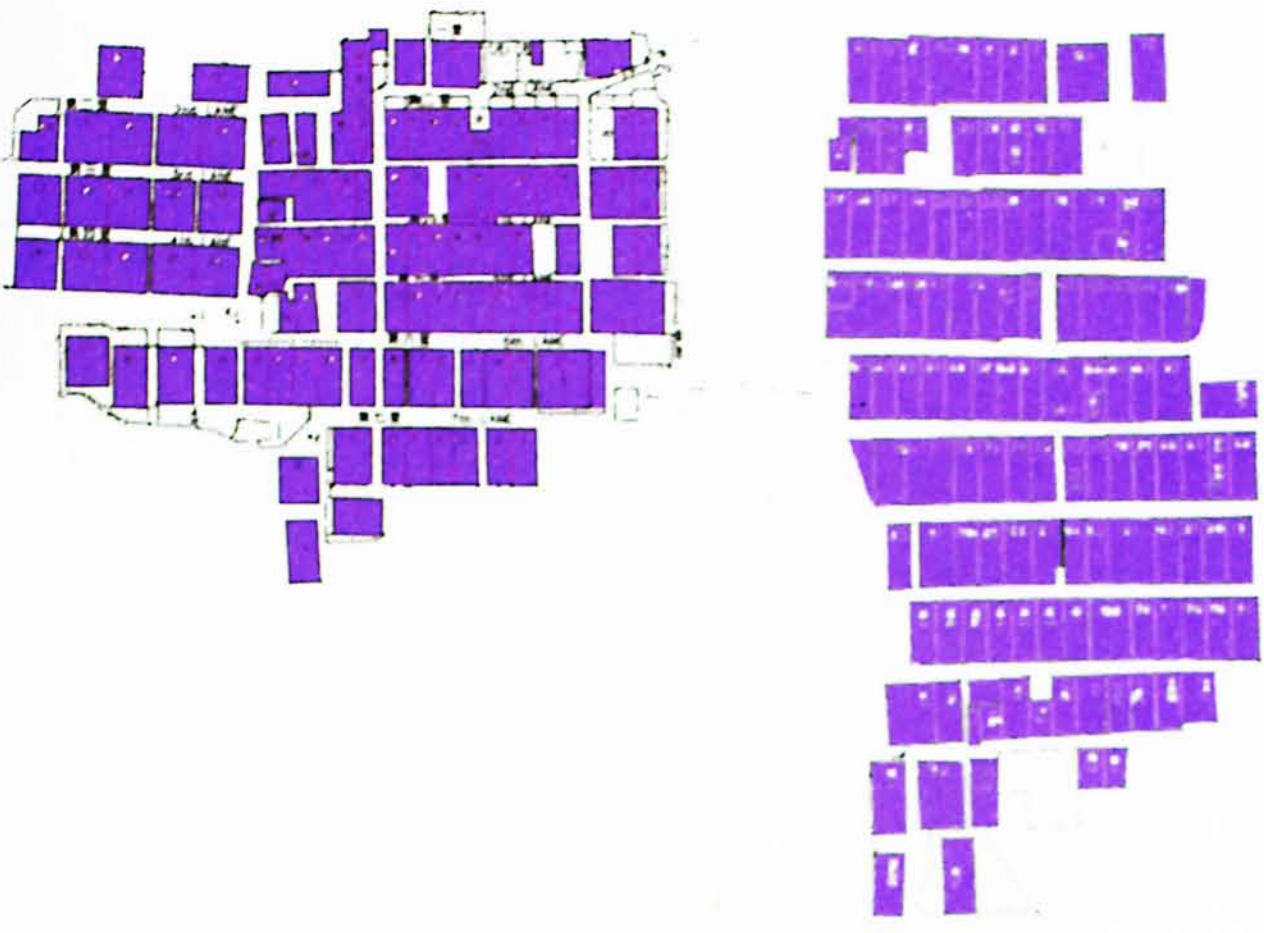
Type 1 d  
Typical Wai in irregular  
shape

03. Research  
a. Study of the village



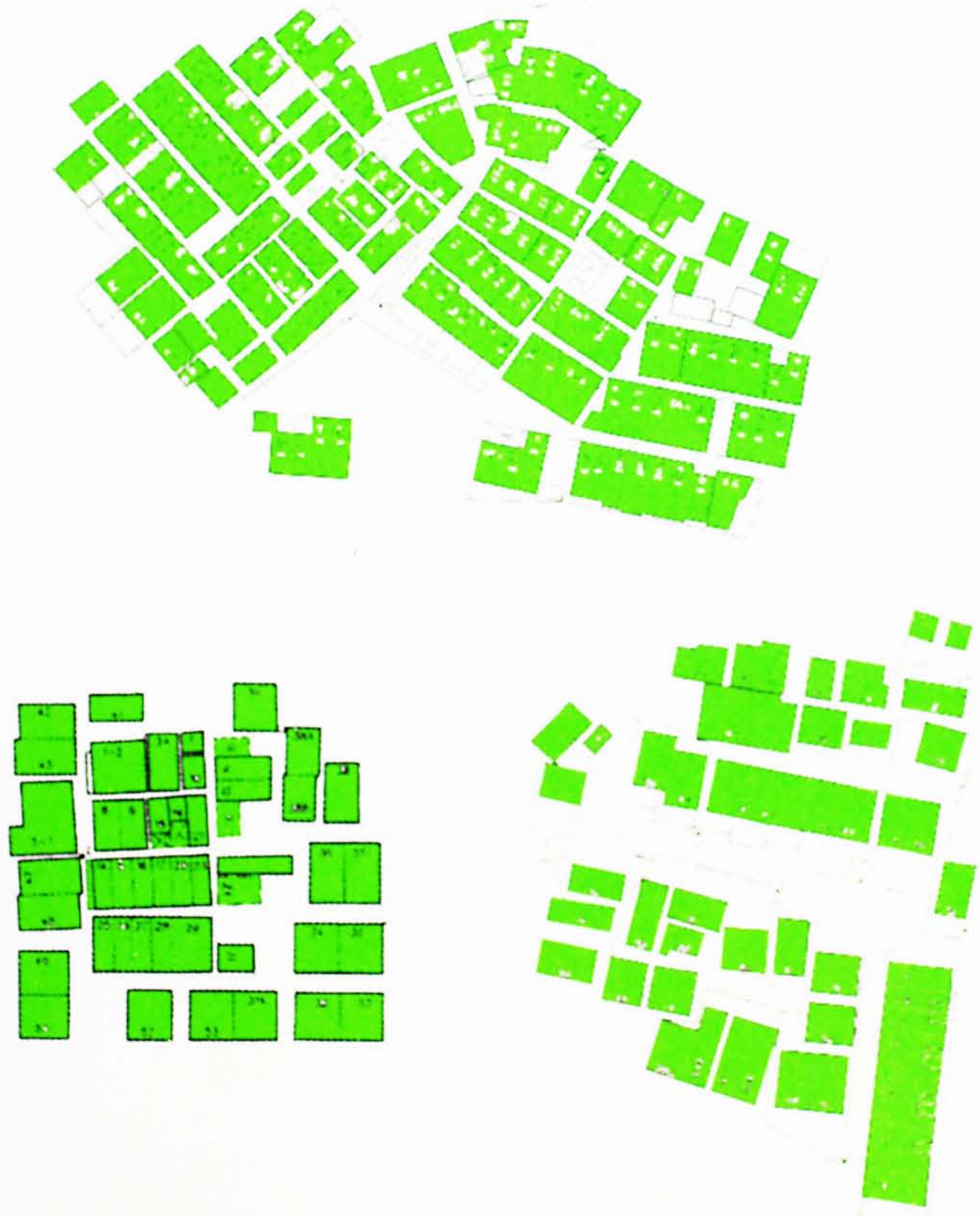
Study of the village

Type 2 Parallel Houses



03. Research  
a. Study of the village

Type 3 Natural Settlement



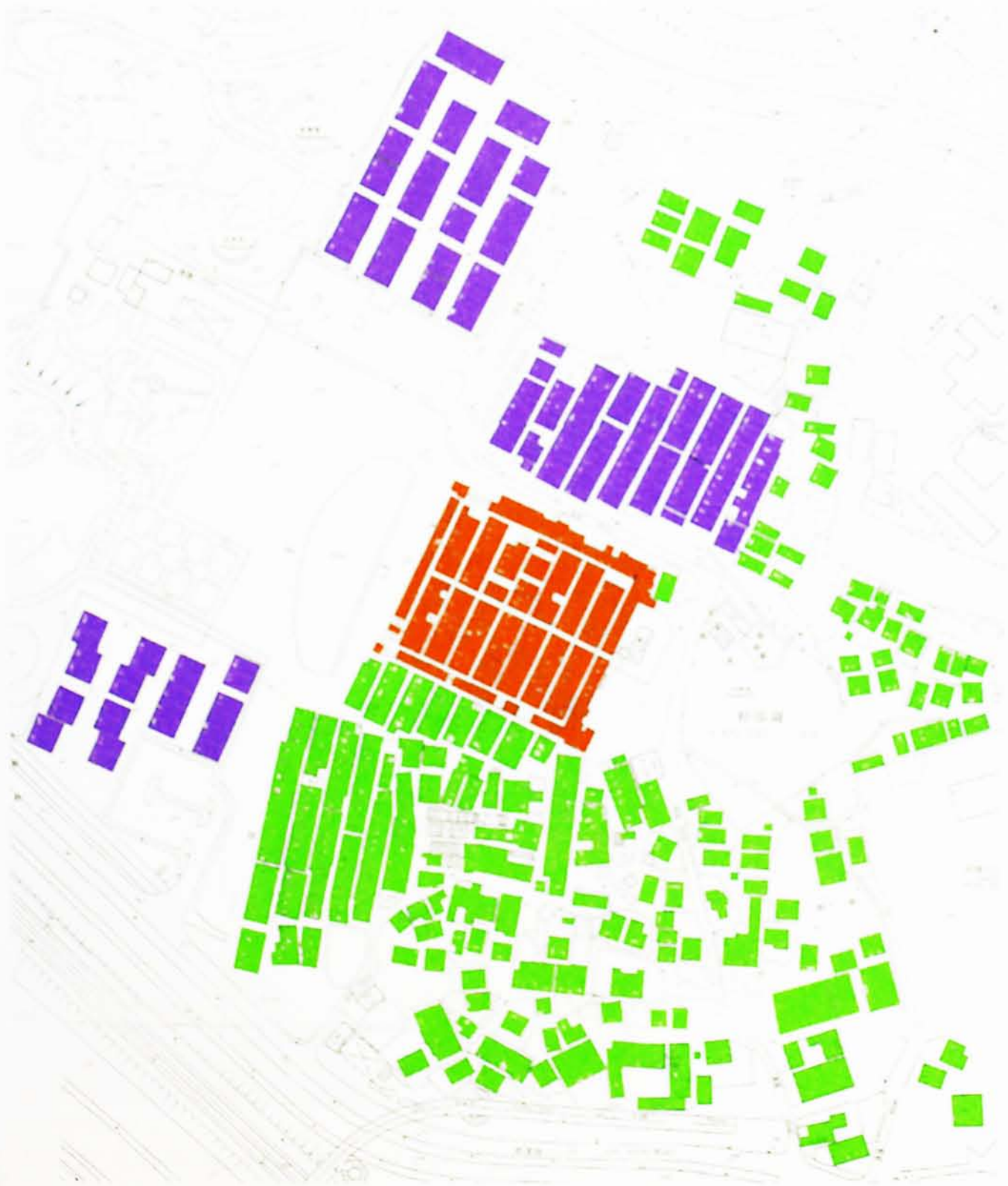


Study of the village

2. Settlement pattern of village



Usually, the Wai is the centre of the whole village and surrounded by the houses which in a form of natural arrangement.



03. Research  
a. Study of the village



Impact of urbanizaion to the village settlement

Due to the urbanization process starts in the NT (Rural Area), it changed the environment of those area.



Condition 1.  
Just the infrastructure built in the surrounding area, no high rise buildings appear.



Condition 2.  
Beside infrastructure, some high rise buildings were built in the surrounding area.



Condition 3.  
Village is fully surrounded by the new urban development.

03. Research  
b. Impact of urbanization to the village area



Existing condition of the area along railway (infrastructure)

From the development experience of KCRC East Rail, we can understand how infrastructure destroy the environment of the village.

1. Tai Wai Station



Figure/ground Study

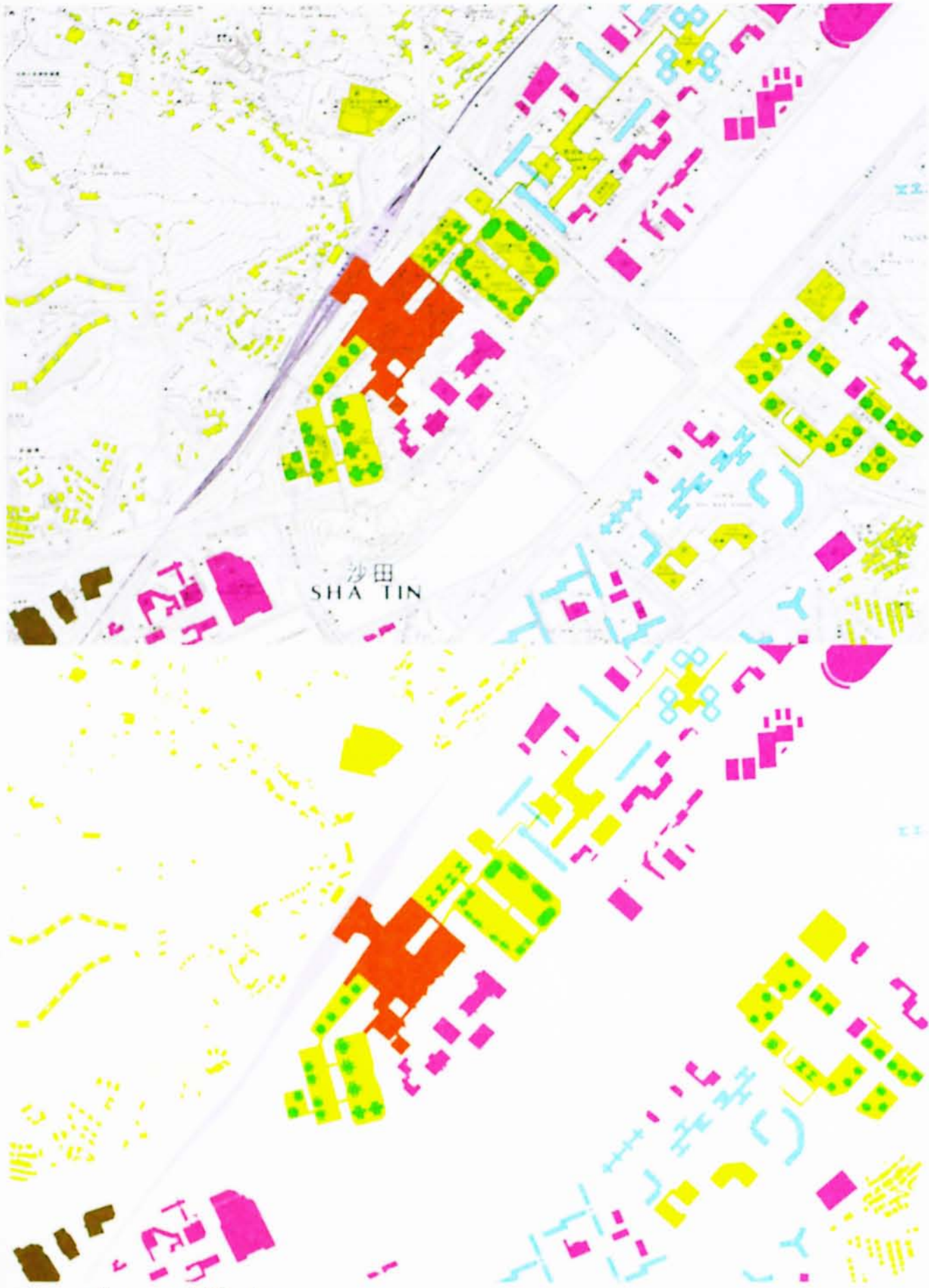
- railway station
- railway
- villages
- 6-7 storey old buildings
- industrial buildings
- private high rise
- public high rise
- podium
- new railway depot

03. Research  
c. Existing condition  
of the area along  
railway (infrastructure)



Existing condition of the area along railway (infrastructure)

2. Sha Tin Station



Figure/ground Study

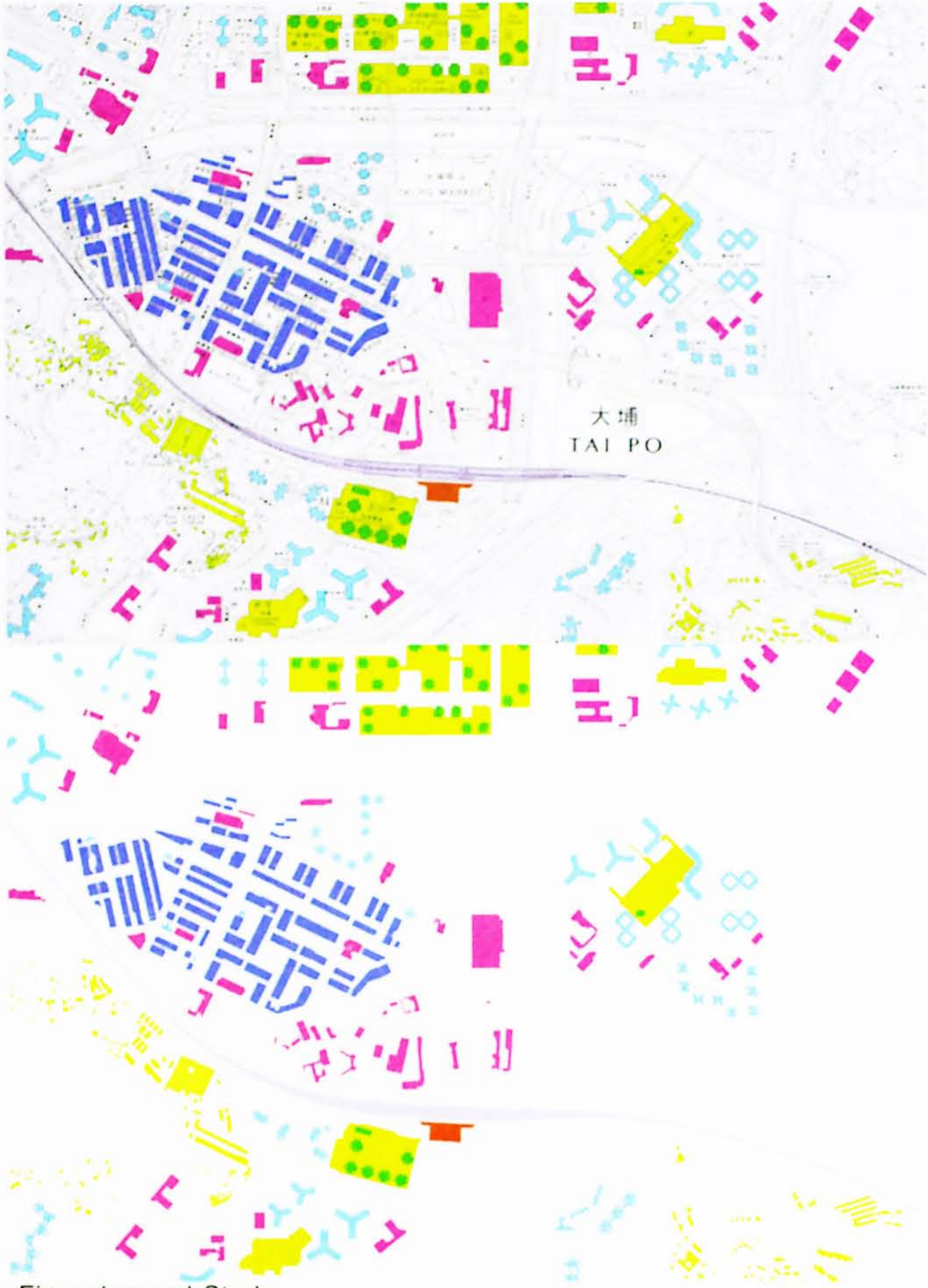


03. Research  
c. Existing condition  
of the area along  
railway (infrastructure)



Existing condition of the area along railway (infrastructure)

3. Tai Po Station



03. Research  
c. Existing condition  
of the area along  
railway (infrastructure)

Figure/ground Study

- railway station
- railway
- villages
- 6-7 storey old buildings
- industrial buildings
- private high rise
- public high rise
- podium



Existing condition of the area along railway (infrastructure)

4. Fanling Station



03. Research  
c. Existing condition  
of the area along  
railway (infrastructure)

Figure/ground Study

- railway station
- railway
- villages
- 6-7 storey old buildings
- industrial buildings
- private high rise
- public high rise
- podium



Existing condition of the area along railway (infrastructure)

5. Sheung Shui Station



03. Research  
c. Existing condition  
of the area along  
railway (infrastructure)

Figure/ground Study

- railway station
- railway
- villages
- 6-7 storey old buildings
- industrial buildings
- private high rise
- public high rise
- podium

Conclusion :

- a. Originally, those places are rural areas, after the completion of modern railway station, those areas became urbanized. High rise residential buildings with podium and shopping mall replaced the village houses.
- b. Even the remaining villages exist without changes, they just scatter in various areas and in fragments, not in a unified settlement.



Process of urbanization in the rural area

Tai Po station was taken as the example to illustrate how urbanization processes and affects the village settlement

Tai Po Station at 1967



03. Research  
d. Process of  
urbanization  
in the rural area

The original condition before the urbanization took place.  
Most of the area were farmland and village houses, just a few modern  
building were built.



Process of urbanization in the rural area

Tai Po Station at 1976



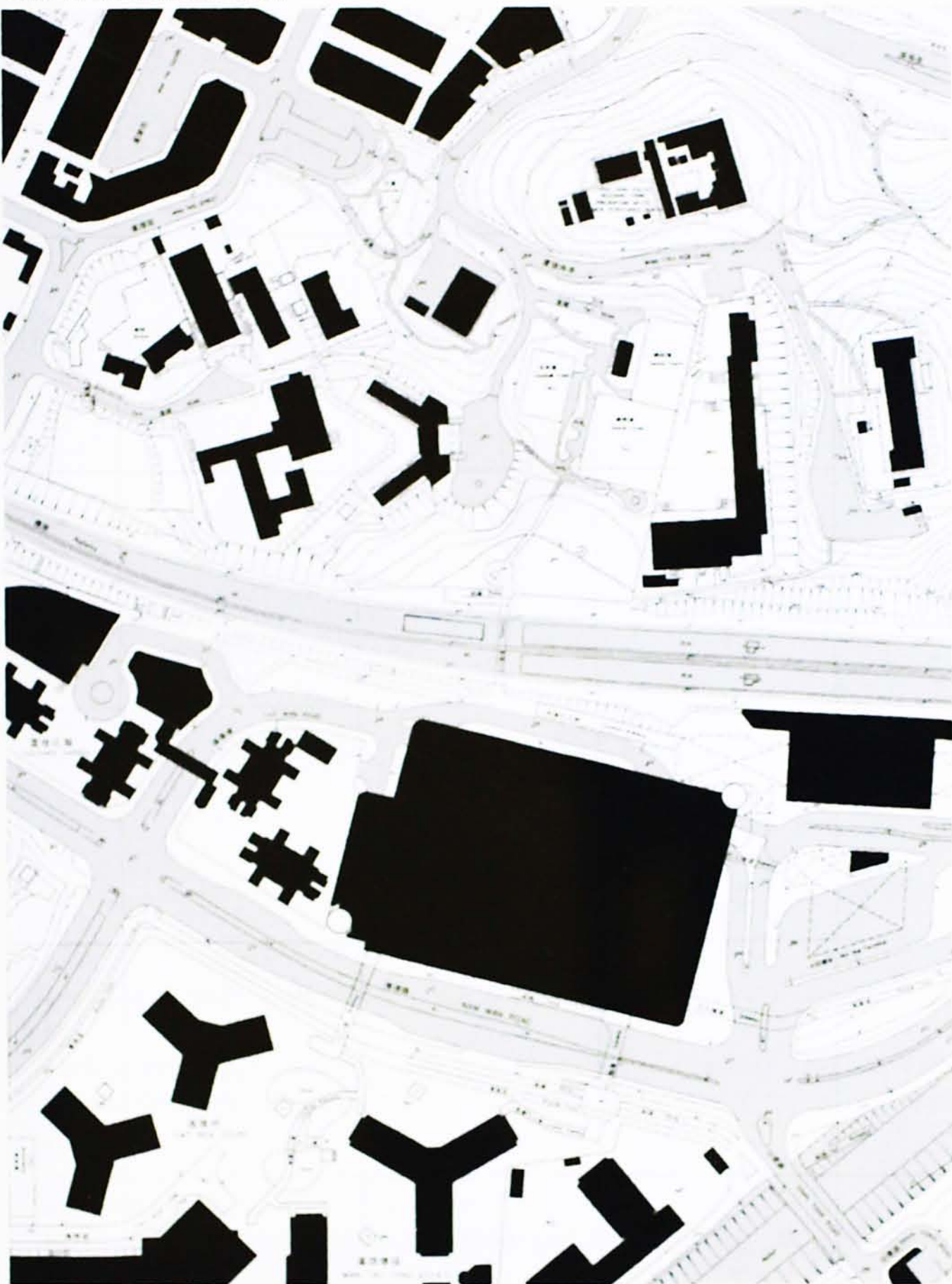
03. Research  
d. Process of  
urbanization  
in the rural area

The urbanization process started to take place.  
Although farmland can be found, size of them had reduced seriously.  
There were still lots of village houses could be found.  
Some modern buildings (in the height of 6-7 storey, same as the type of old buildings in mongkok) were built.



## Process of urbanization in the rural area

Tai Po Station at 2001



### 03. Research d. Process of urbanization in the rural area

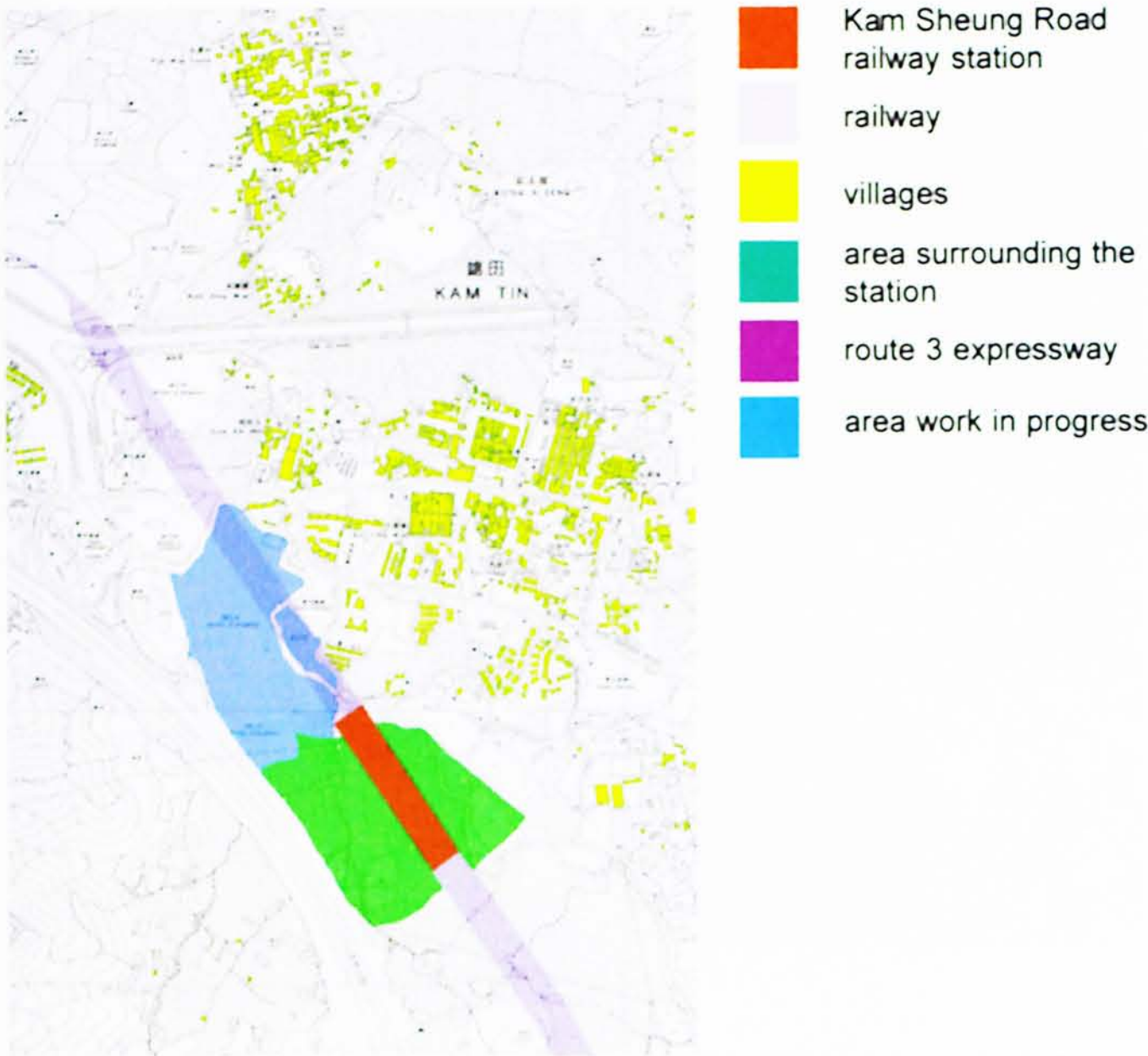
The urbanization process was completed.  
No farmland and village houses can be found, all of them were superseded by the high rise buildings.

Conclusion:  
From the example of Tai Po Station, we can understand that when the urbanization starts to take place, changes will take place in the area of farmland first, then start in the area of village houses consequently. However, all of them will be superseded by the high rise buildings finally.



Condition of Kam Tin

With the construction of KCRC West Rail, Kam Sheung Road Station. It brings the urbanization process start in the area of Kam Tin and the construction of other infrastructure.



03. Research  
e. Condition of Kam Tin

Kam Tin, with construction of West Rail and Kam Sheung Road Station

The most possible situation after the completion of West Rail in Kam Tin

- It will become the same condition of Shatin and Sheung Shui, with the high rise developments, if we consider the experience of the KCRC East Rail.

Question

- Do we want the similar case of Shatin and Sheung Shui happen in Kam Tin ?
- Do we want our traditional hertiages superseded by the high rise developments ?
- Do we want the villages becomes fragment and scatters in various areas?
- OR we can purpose different strategy to the future developement of Kam Tin?

My Prepositions

- To avoid the high rise residential developements supersede the areas of Kam Tin
- To prevent the villages houses or this kind of environment disappear in Hong Kong
- Purpose a strategy which can allow a sustainable developement to this area



## Analysis of Kam Tin

### Context of Kam Tin

### Kam Tin



## 04. Planning Strategy

### a. Analysis of Kam Tin

### Kam Tin Aerial Photo







Kam Tin in 1990  
The Time before the construction of the infrastructure

04. Planning Strategy  
a. Analysis of Kam Tin

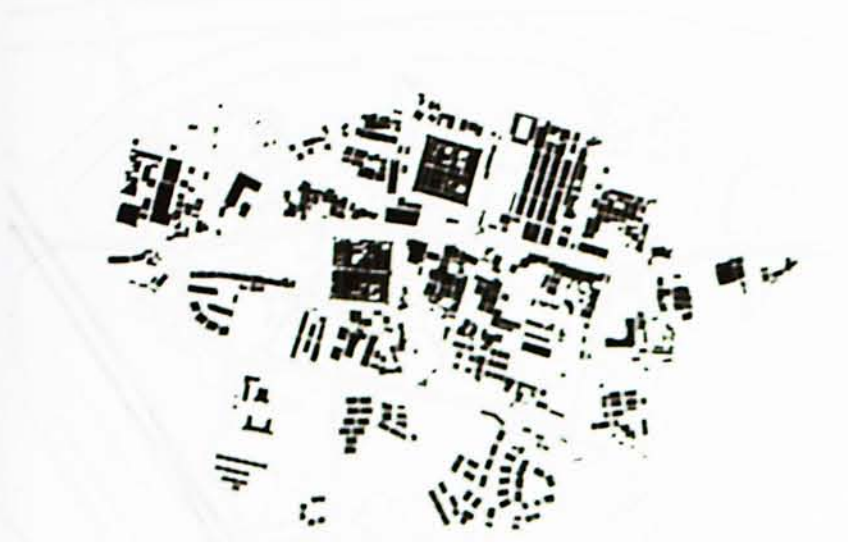


Kam Tin in 2003  
New infrastructure redefines the existing profile of the  
Kam Tin Area



Proposal

A planning strategy proposes an alternative use (leisure and recreation)  
of the lost space which defined by the infrastructure



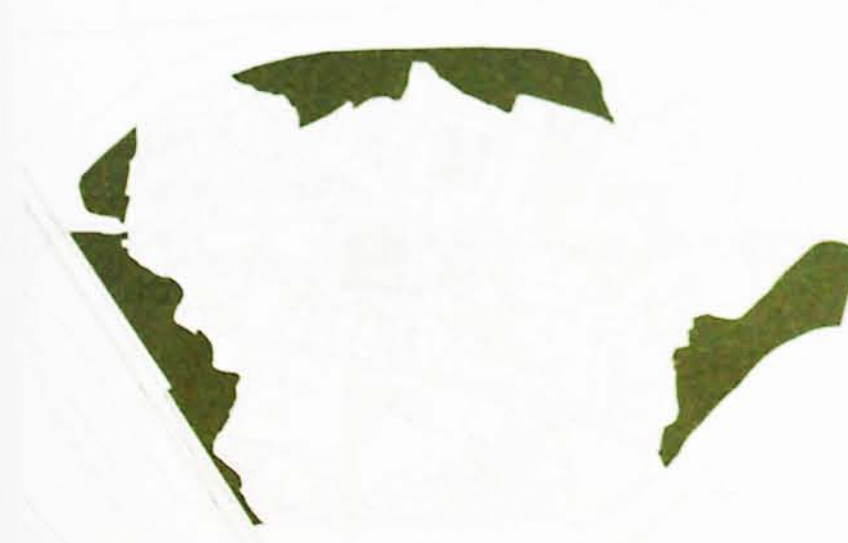
Building Mass



Commercial Street and  
Heritage



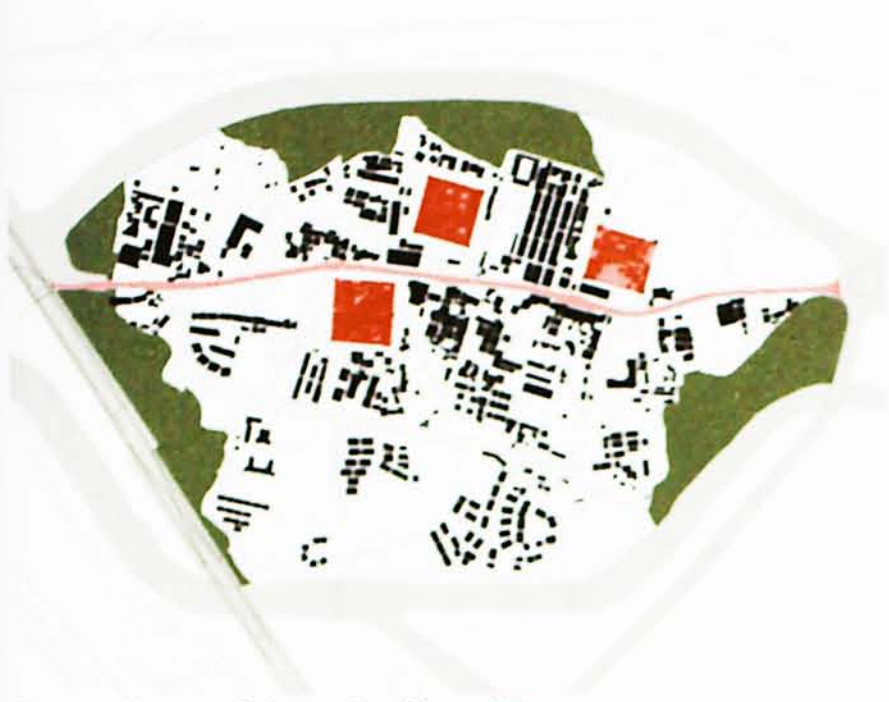
Infrastructure



Lost Space (Farmland)

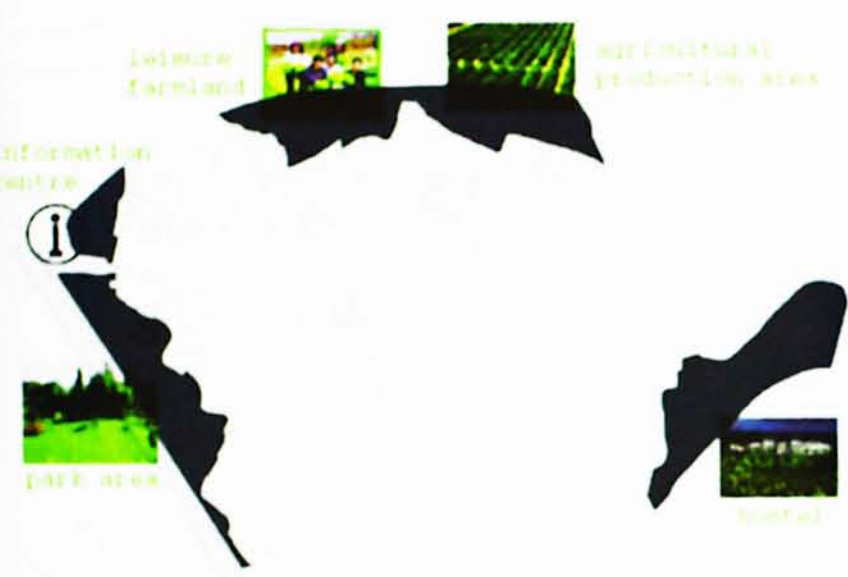
04. Planning Strategy  
b. Proposal

Proposal

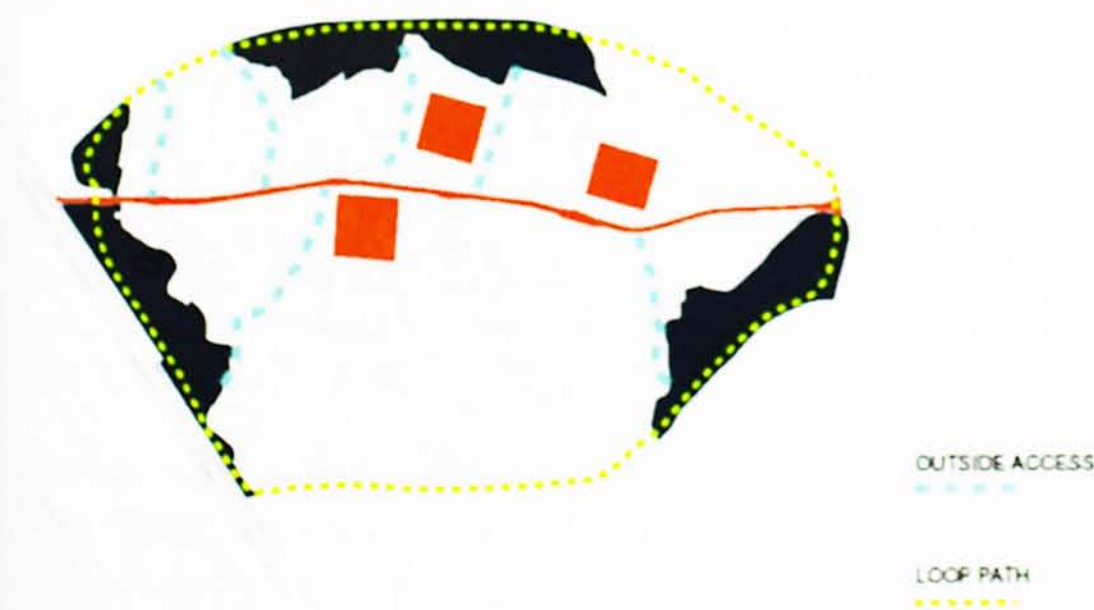


Overall conditions in Kam Tin

04. Planning Strategy  
b. Proposal



Programme proposed in those lost space



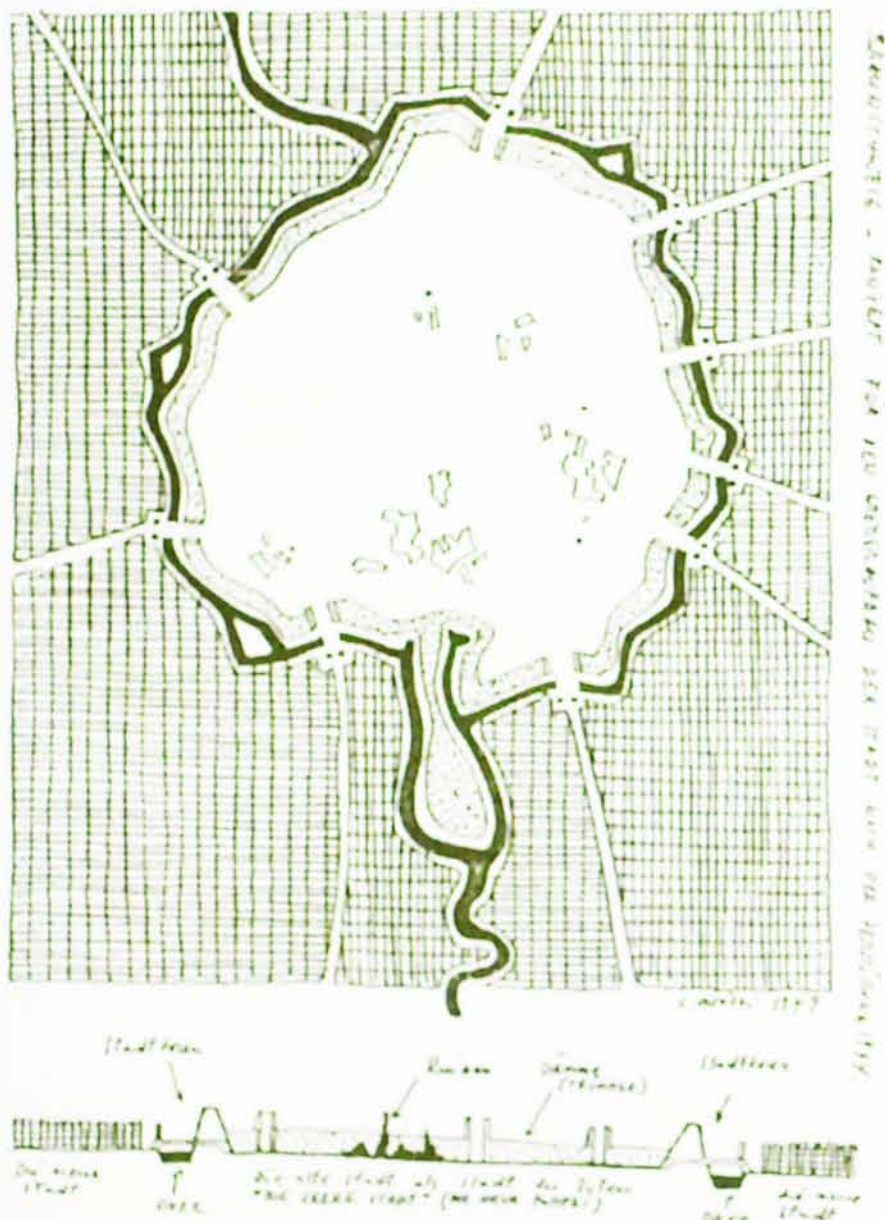
Connection to commercial street and heritage



## Precedent Studies

As those pocket space located at the periphery area of Kam Tin, the design at periphery region are used as precedent studies

a. Luigi Snozzi, braunschweig : an urban utopia



## 05. Precedent Studies

## Project

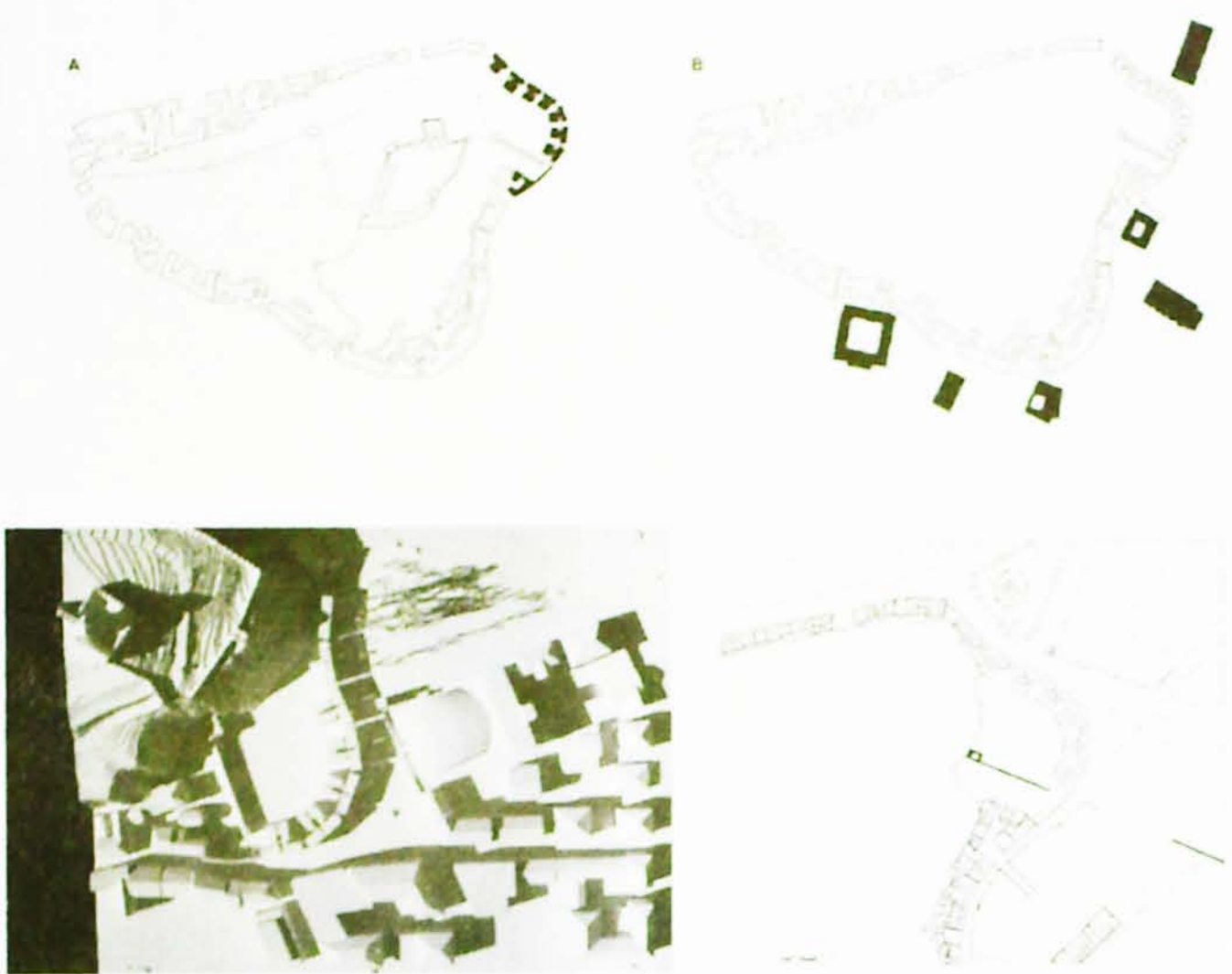
Idea of this project is reconstructing the historical boundaries (periphery), the Baroque walls of this medieval city by a large embankment.

The design at the periphery area represents the historical trace of this medieval city.



Precedent Studies

b. Luigi Snozzi, Piazza del Sole in Bellinzona

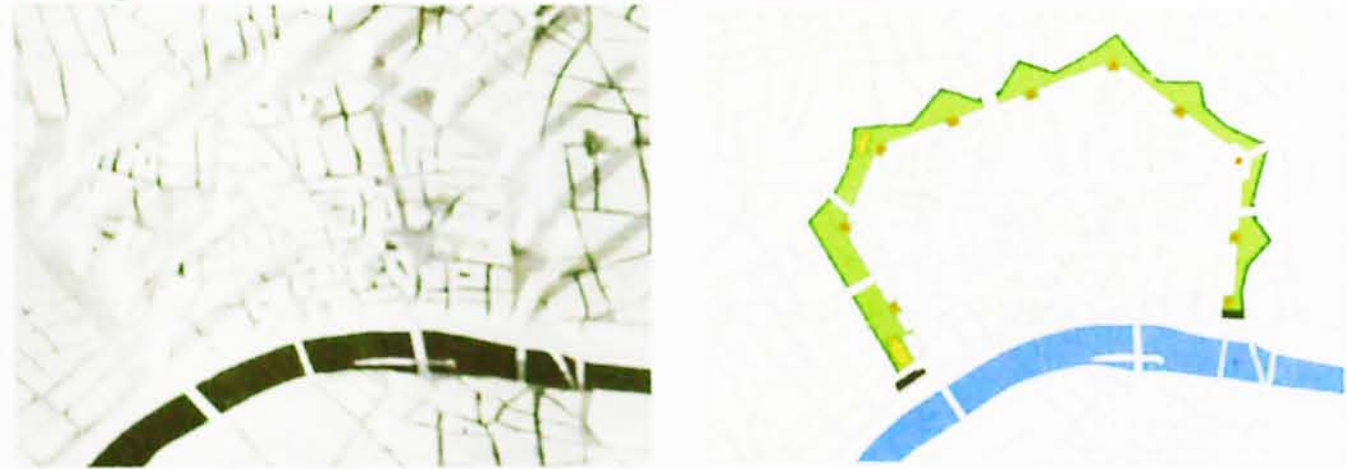


05. Precedent Studies

**Project**  
 Due to the demolition took place during this century, there was a gap happened in the ring around the foot of the hill. This project proposes a completion of this gap by building a row of houses with similiar functions and typologies of surrounding buildings.

**The design at the periphery area marks the outline formed by the natural landscape.**

c. Luigi Snozzi, The Theatre Square in Frankfurt



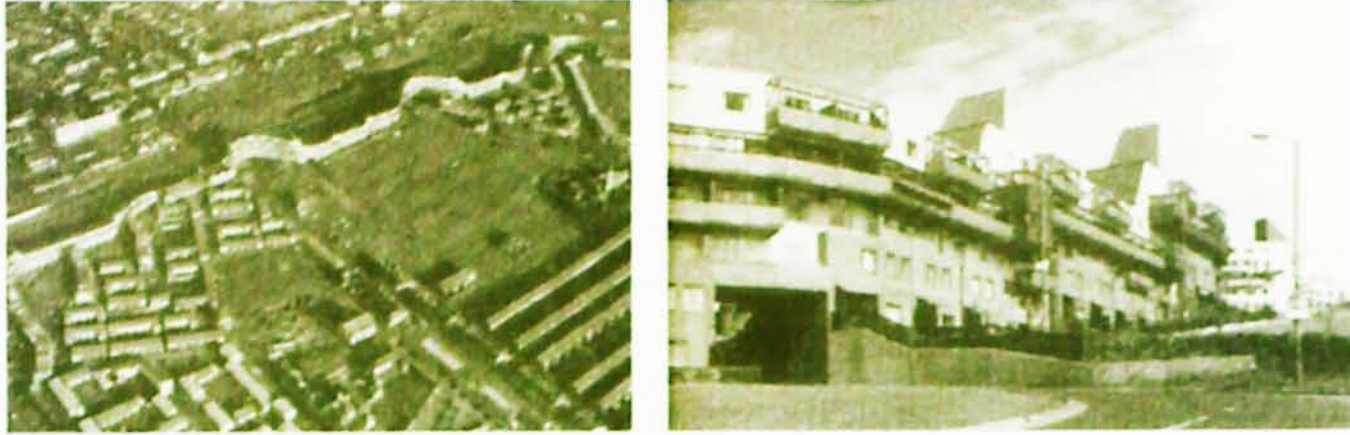
**Project**  
 The basic idea is re-evoking the tracing of the Baroque walls through the defination of a new border element between the historical city and the new city

**The design at the periphery area is speration between the new and old parts of the city**

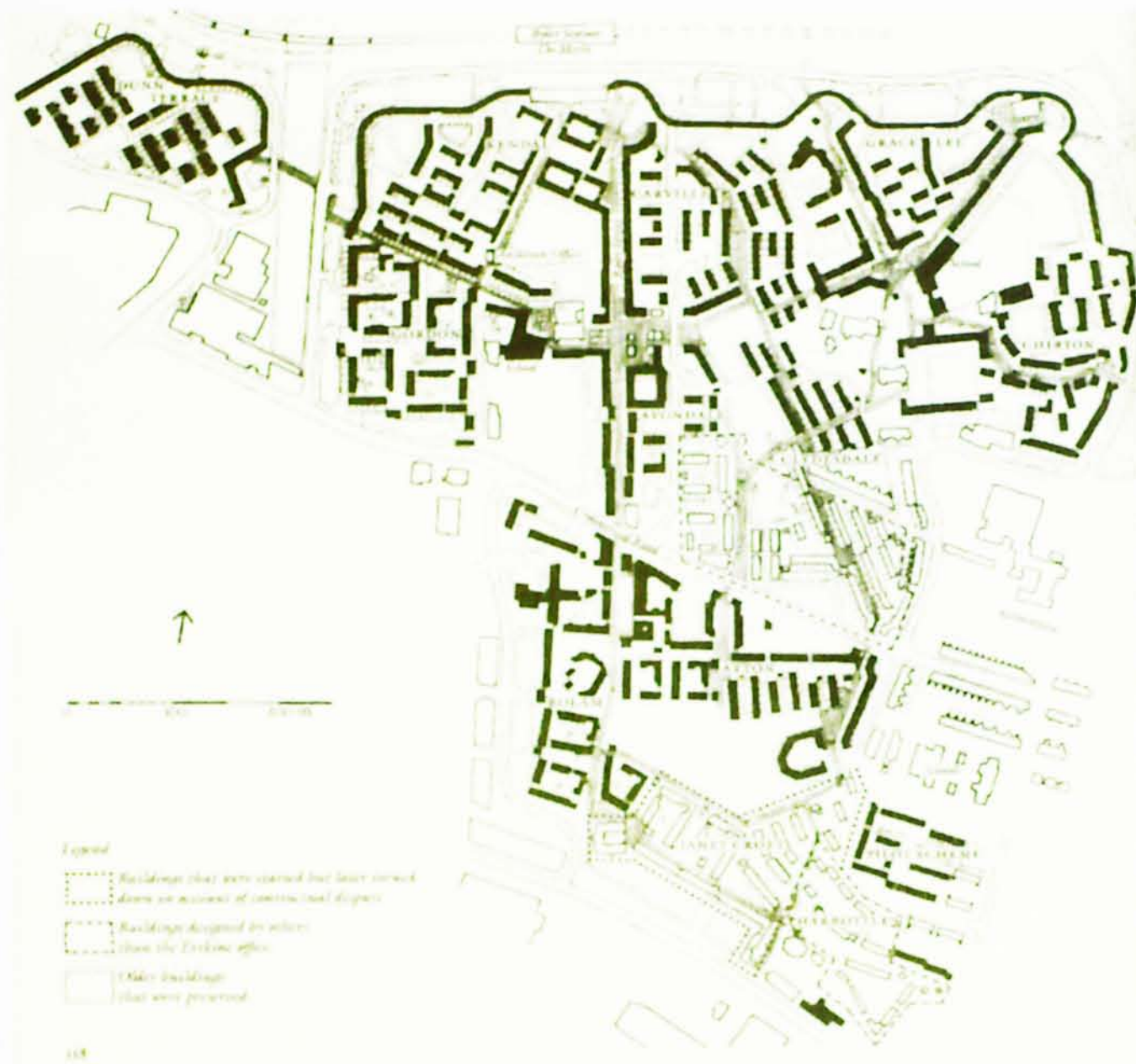


## Precedent Studies

d. Ralph Erskine, Byker Wall, Newcastle



## 05. Precedent Studies



### Project

The wall structure has a protective function - shuts out the traffic noise  
It also separates the Byker area from the outside area, such as the railway station

Nature of this periphery condition

**Solid structure, long and massive form**

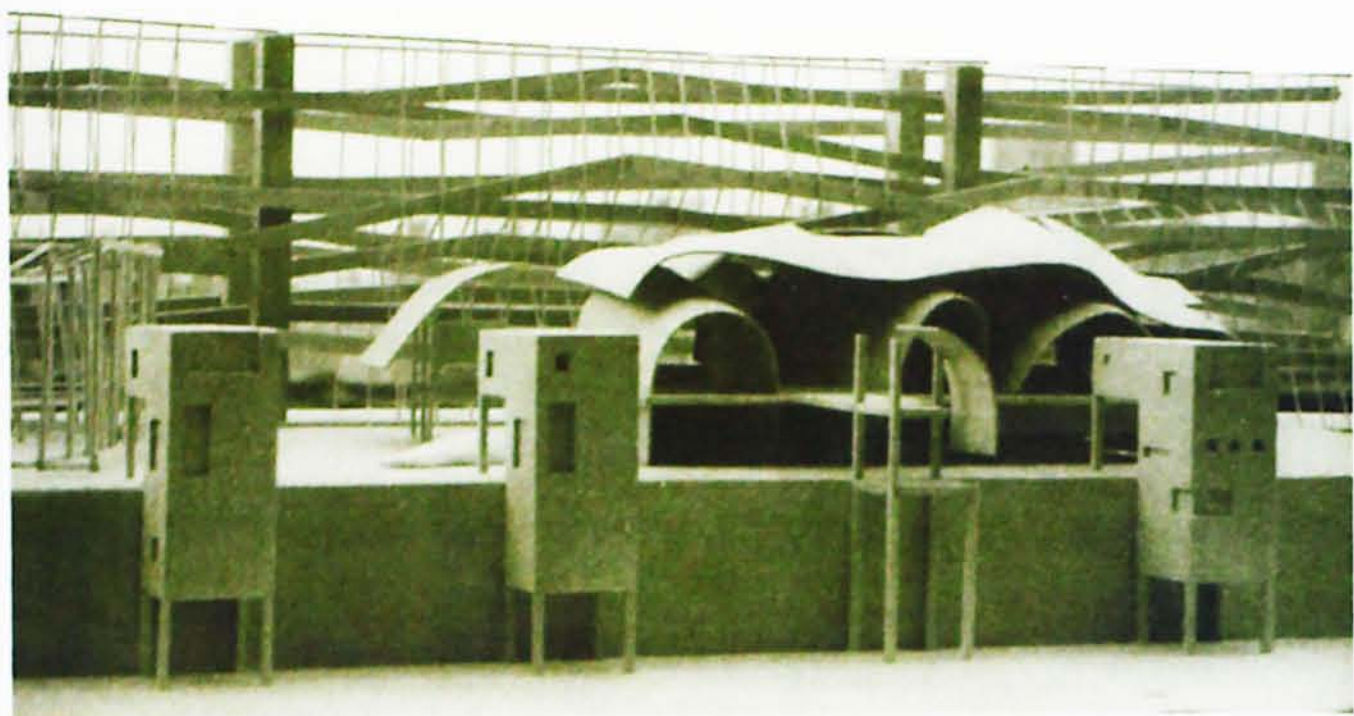
**Separation between inside and outside**

**Strong edge delineation**

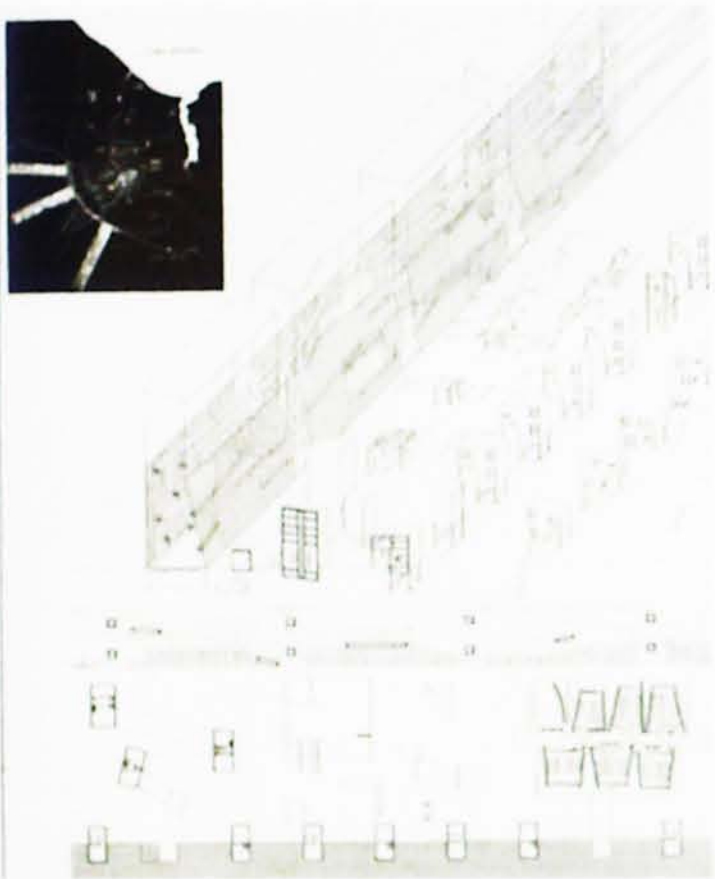


Precedent Studies

e. Steven Holl, Erie Canal Edge, Rochester, New York



05. Precedent Studies



Project  
The edge line delineates between the city and the canal  
It is a **cross-section study which redefines the canal and reinforces the city edges**

Nature of this periphery condition  
**permeable, composed of the small units and some large elements, with different layers of treatment**



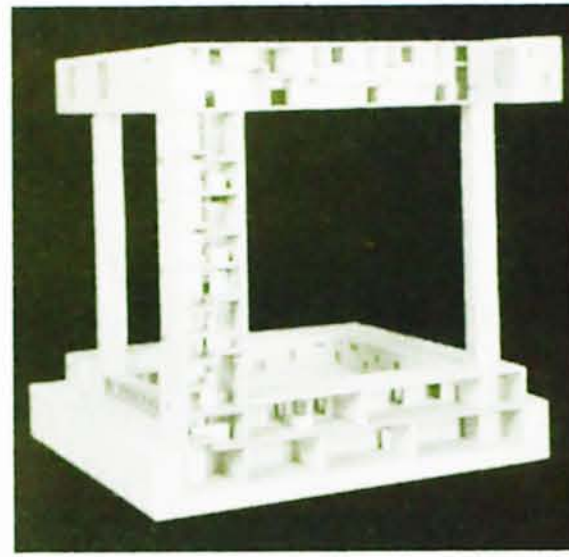


## Precedent Studies

f. Steven Holl, Spatial Retaining Bars, Phoenix, Arizona



## 05. Precedent Studies



### Project

The edge line delineates areas between the desert and the city by **using a frame structure with different programs inside.**

### Nature of this periphery condition

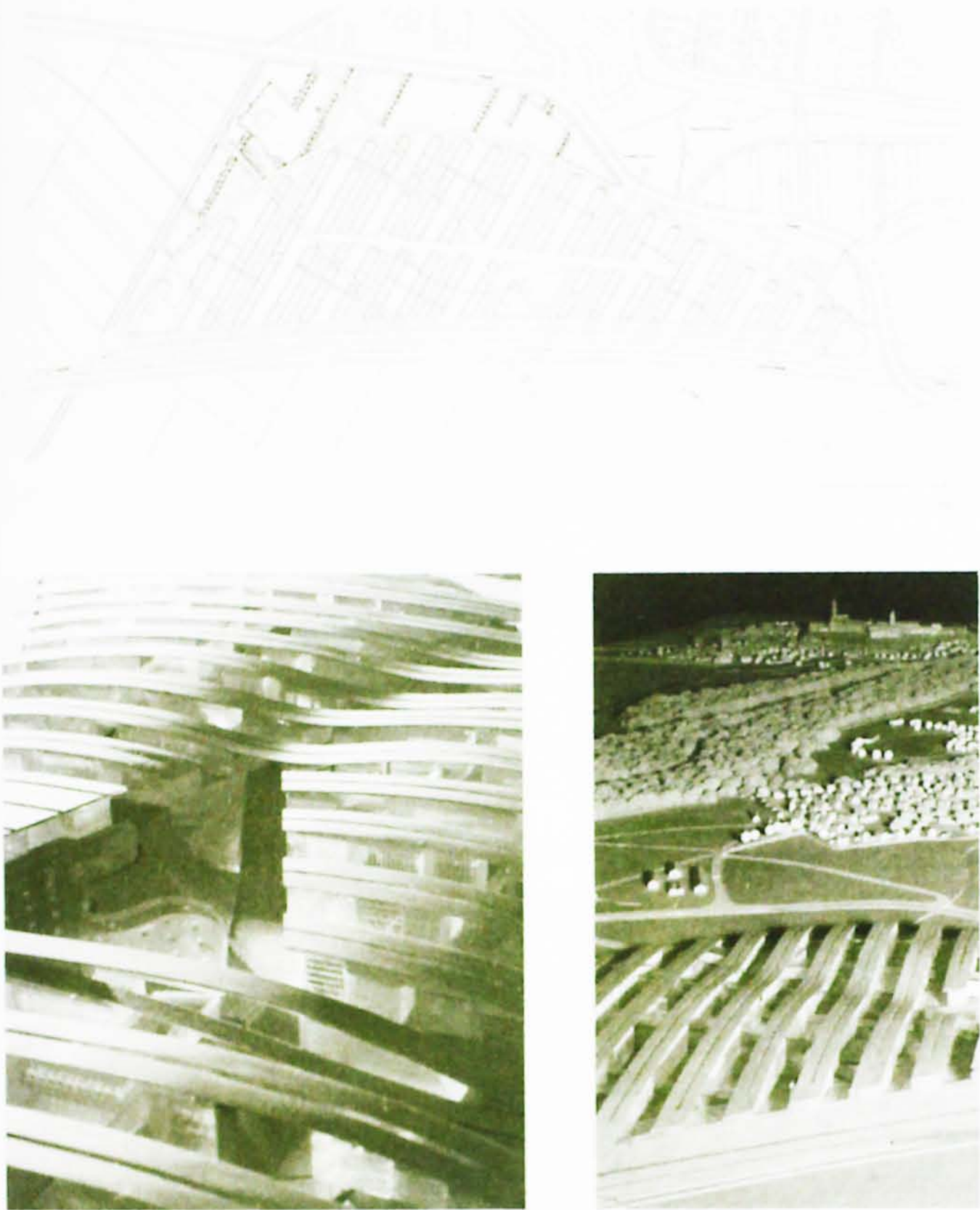
**permeable, composed of the frame structure with different programs**



Precedent Studies

f. Herman hertzberger, Master plan and development proposal,  
Freising (Germany), competition 1993

05. Precedent Studies



Project  
the architect proposes a subtle periphery treatment for the edge condition and the commercial, residential development were designed in the form of the strips

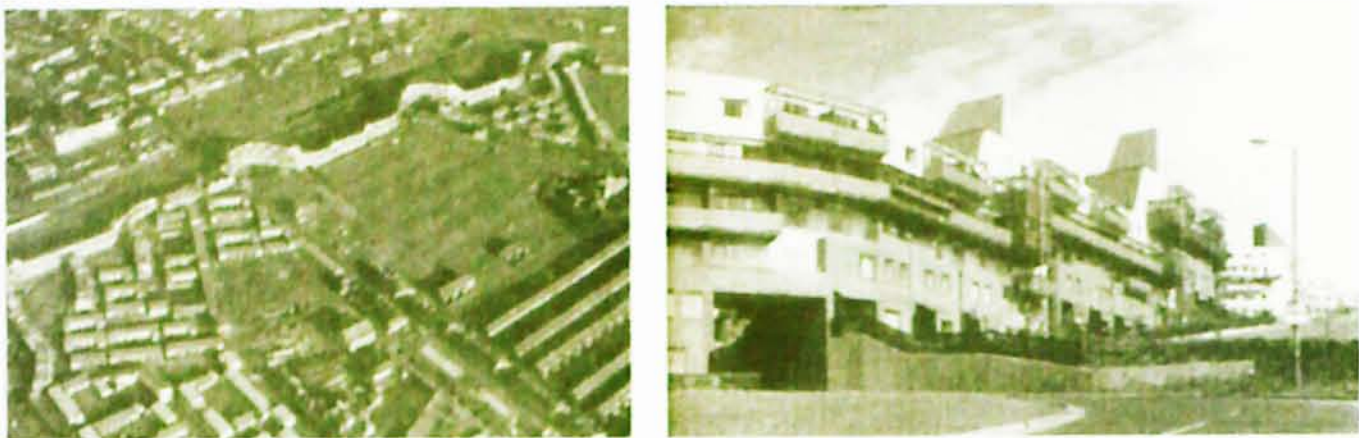
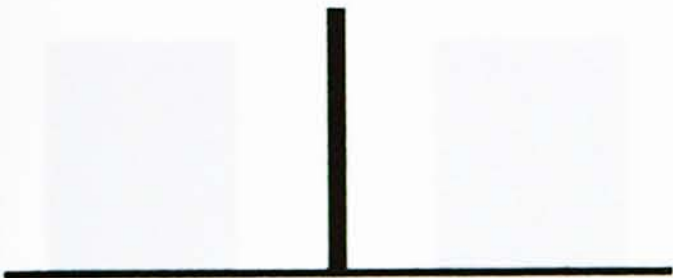
Nature of this periphery condition  
**subtle edge delineation**



Precedent Studies

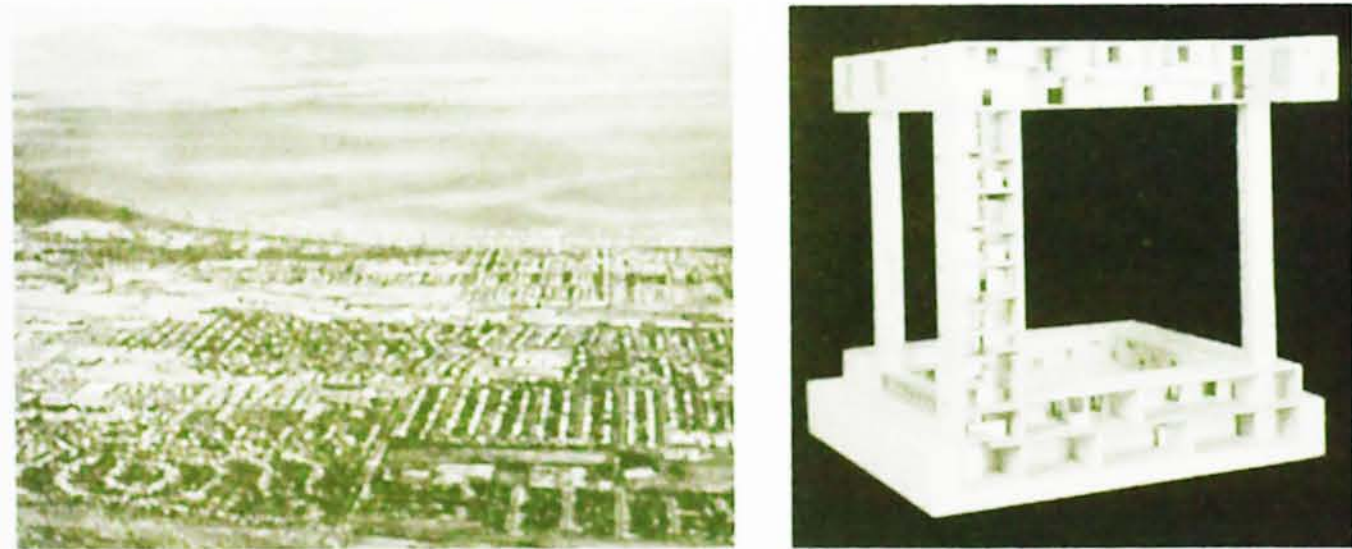
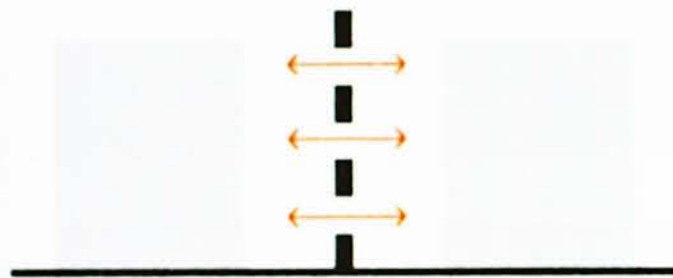
There are 3 categories from those precedents

Case 1.  
Solid seperation with strong edge delineation



Example : Byker Wall

Case 2.  
Seperation with permeability



Example : Spatial Retaining Bars

05. Precedent Studies



Precedent Studies

Case 3.  
subtle edge delineation



05. Precedent Studies

Example : Master plan and development proposal, Freising (Germany)

From all those precedents, case 3 (subtle design method) is suitable for my project

Reason 1.  
Existing land form is very clean (all are farmland), subtle design can keep the existing profile of the land and minimum disturbance to the site

Reason 2.  
Low profile building form will not block the view for the village house



Site



06. Design  
a. Site

As the area of those pocket space spread out the whole area of Kam Tin, only part of the area are chosen as design intervention.



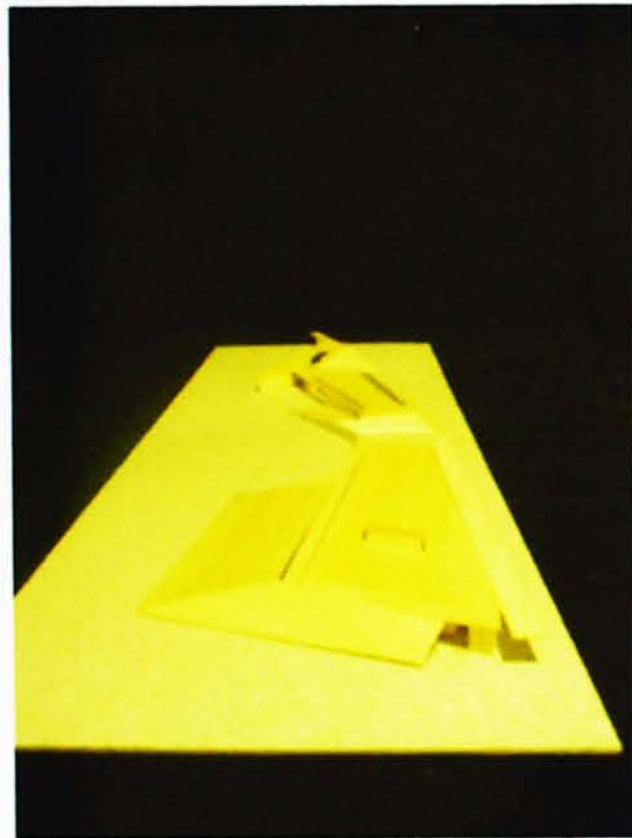
Study of the area for design intervention



**Design development at the massing scale**

During the design stage, model was used as the tool to explore the design in order to achieve the subtle design which is suitable for this site

Design Development

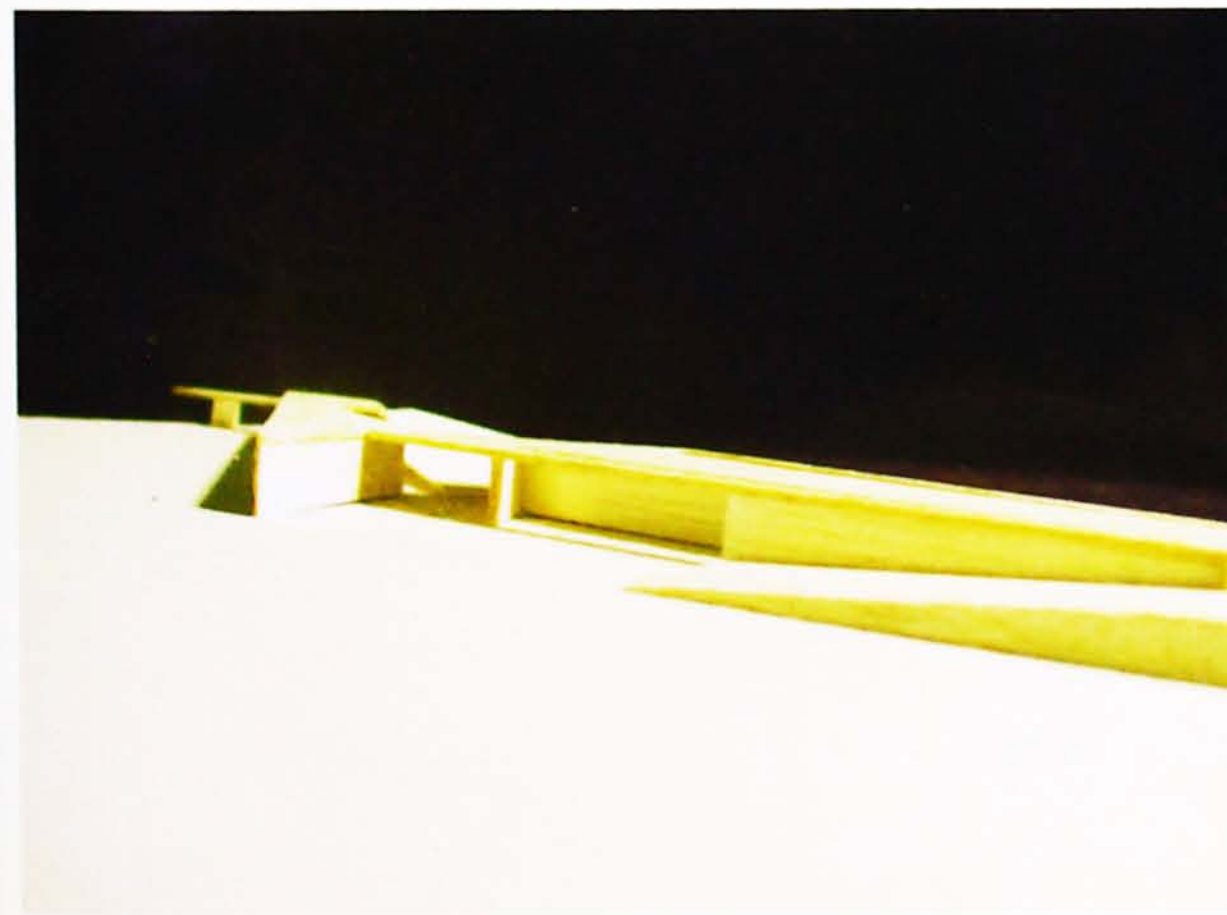
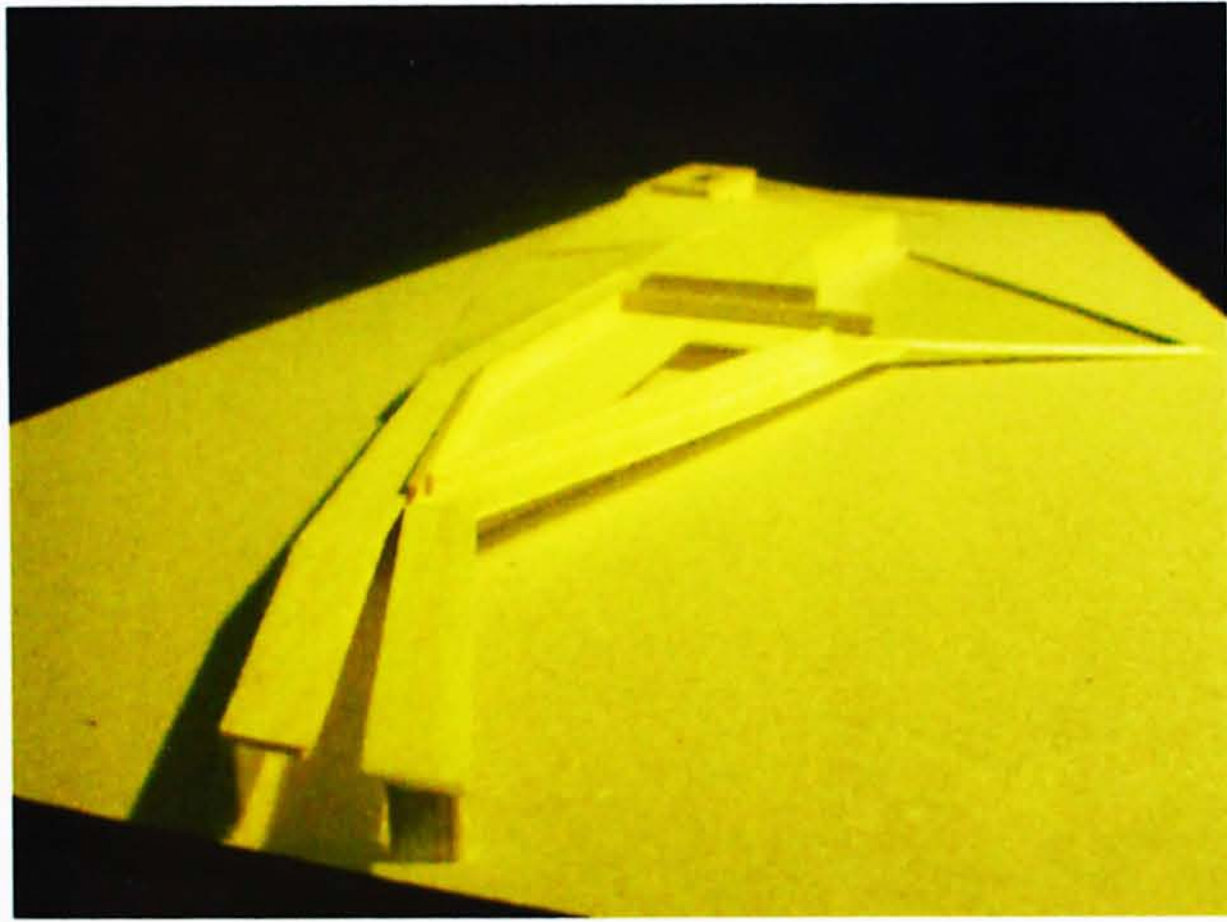
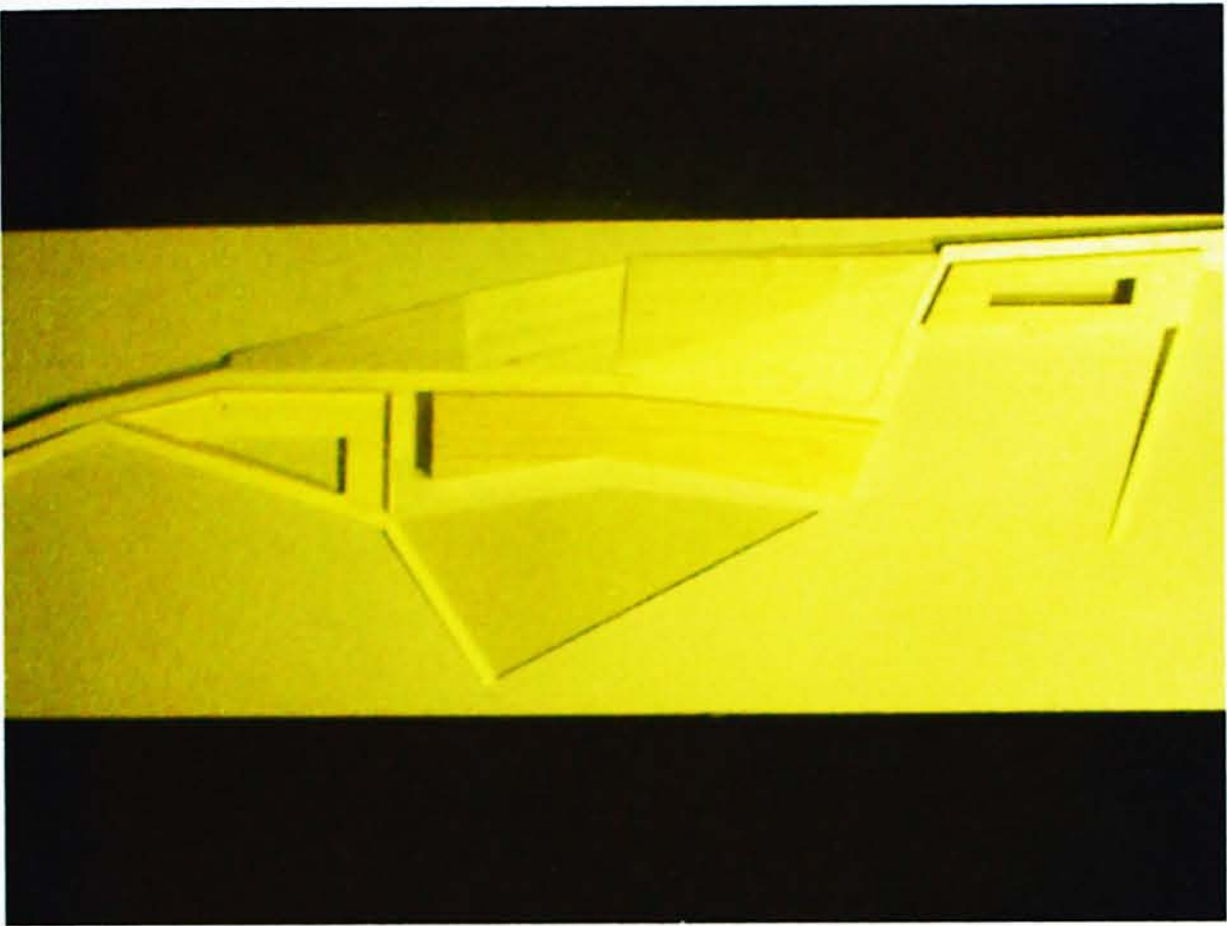


**06. Design**  
**b. Design development**  
**at the massing scale**



Design development at the massing scale

First Option

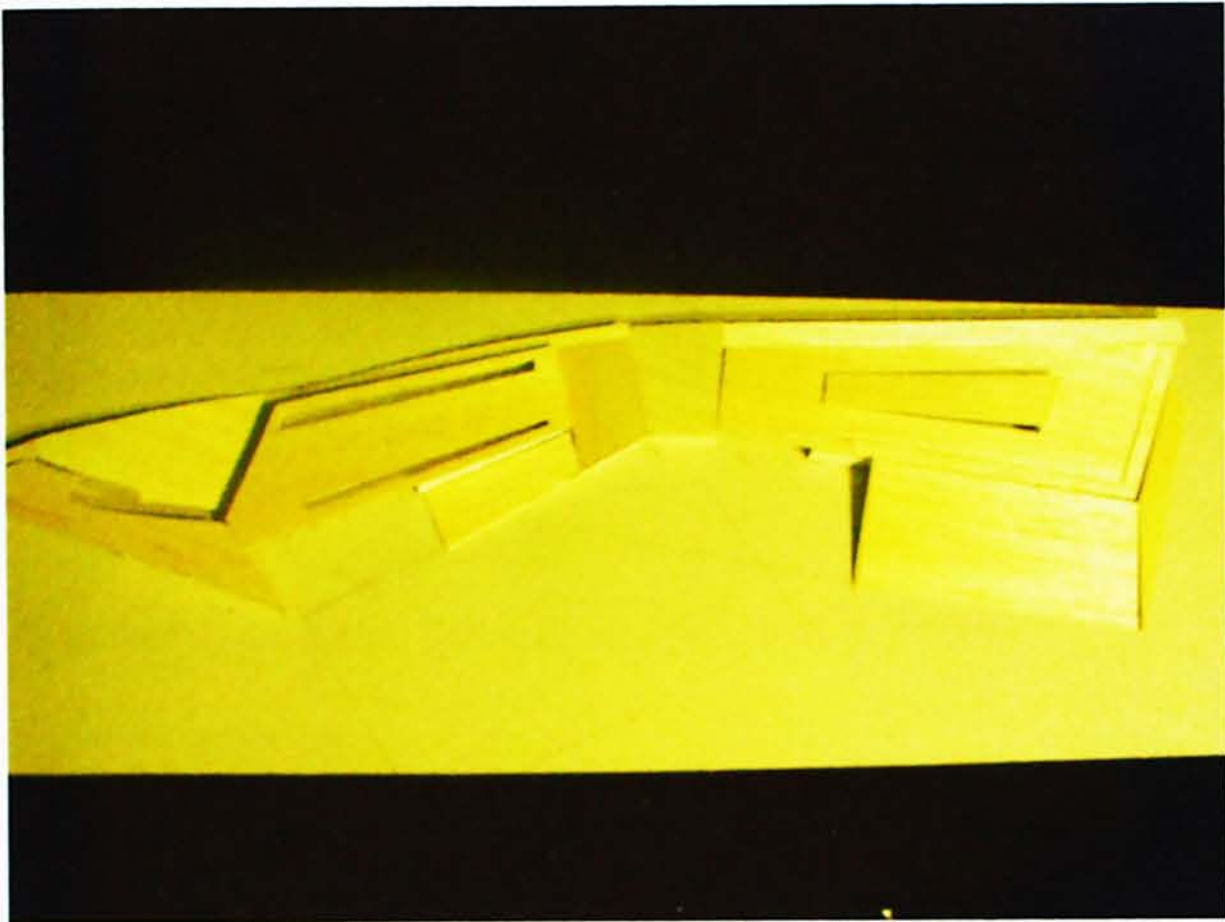


06. Design  
b. Design development  
at the massing scale

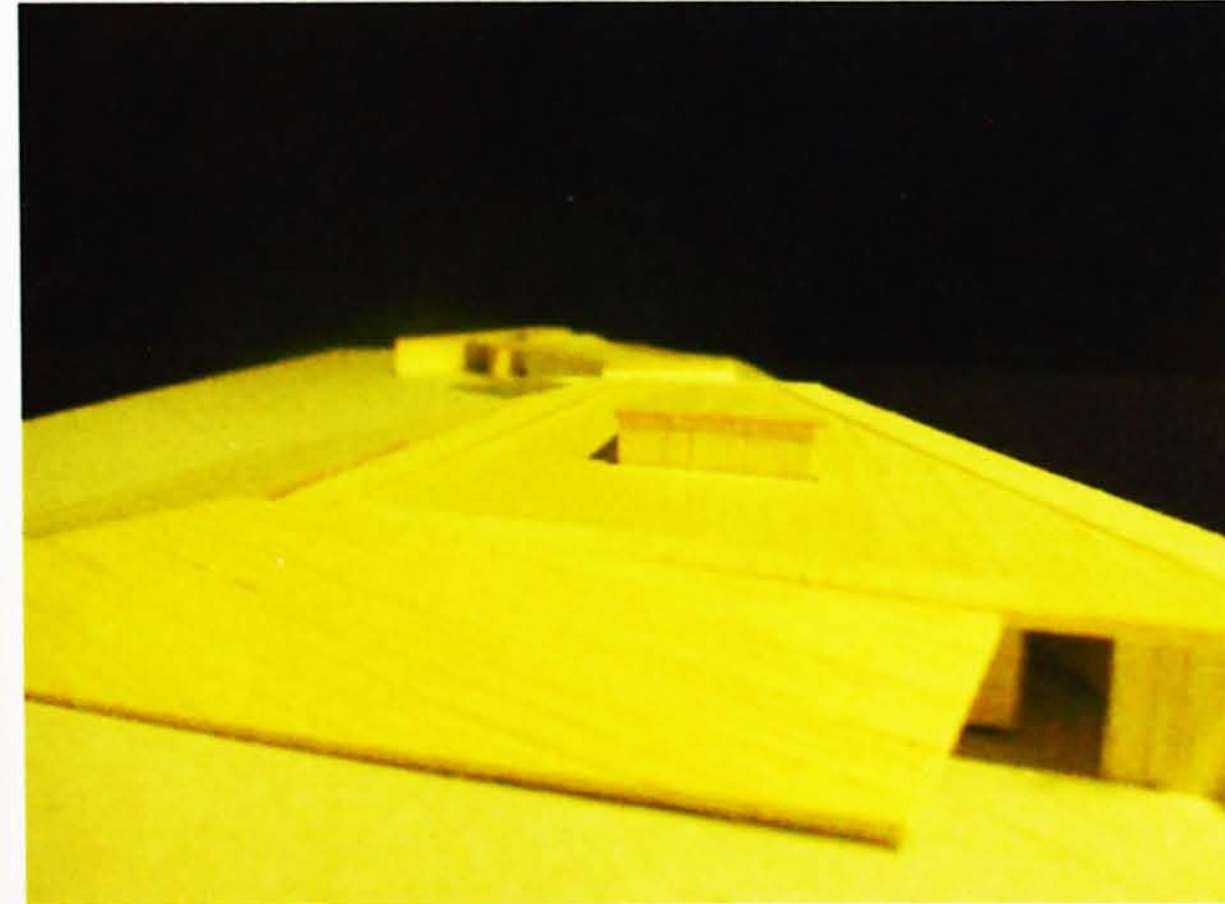
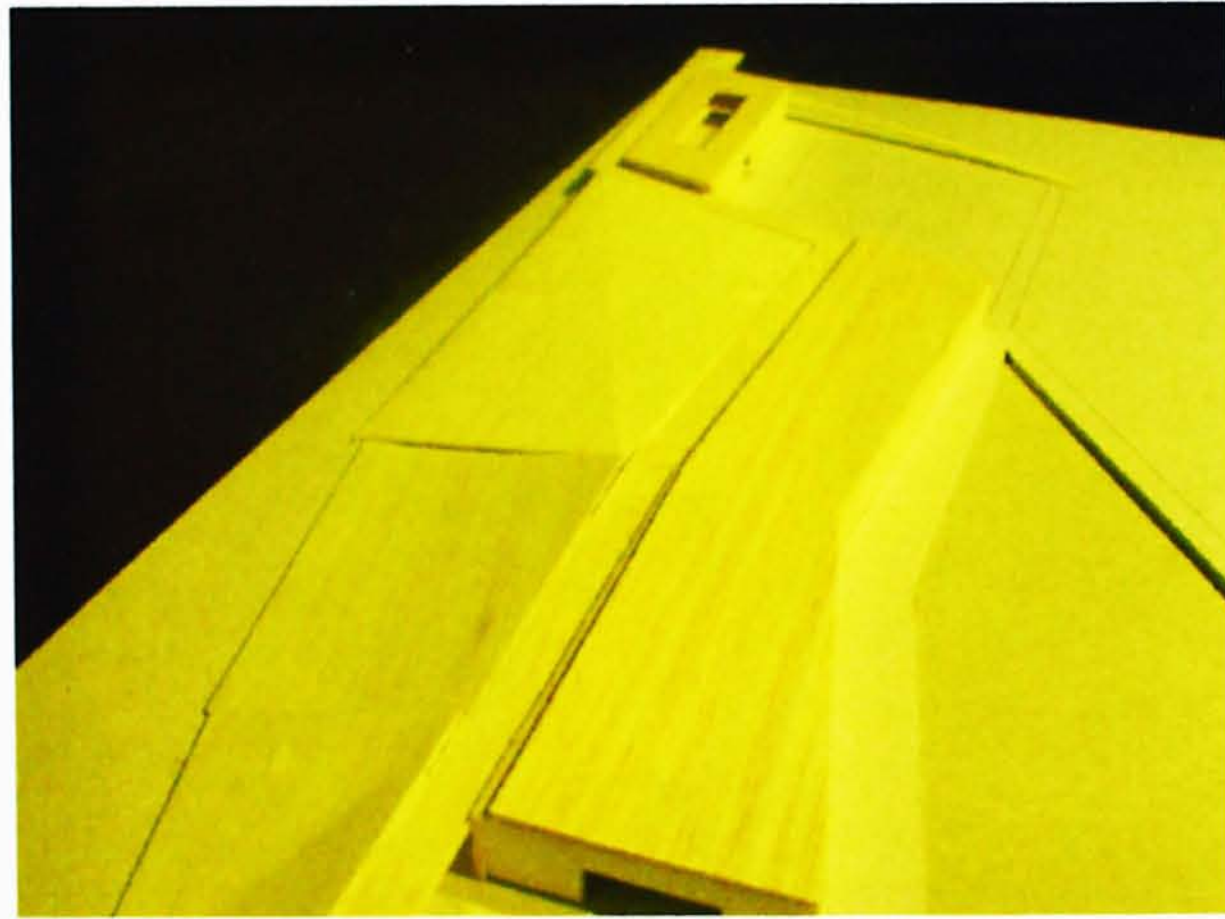


Design development at the massing scale

Second Option



06. Design  
b. Design development  
at the massing scale





**Program of detail design**

Program is the leisure farming.

Why leisure farming?

- 1. Existing land is the farm or green area, this proposed program can make use of the existing land and keep part of the farm so that it will give minimum disturbance to the area.
- 2. Leisure farm can allow the outsiders to visit the area, outsiders and villagers can have a place to come together and they can have dialogue to each other in this leisure farm.

**06. Design**  
**c. Program of detail design**

Program for the detail design part (leisure farm house)

- 1. Farming part
  - a. Farm
  - b. Green House
  - c. Machinery Equipment
  - d. Place for storage of fertilizers and seeds
  - e. Protection equipment
  - f. Protection settings
  - g. Water supply for farm
  - h. Rest place (in the pavilion form)
  - i. Workshop
- 2. Educational part
  - a. Lecture rooms
  - b. Library
  - c. Laboratory
    - i. Practice equipment
    - ii. Practice techniques
  - d. Exhibition
  - e. Office
- 3. Other facilities
  - a. Kitchen
  - b. Cafe / Restaurant
  - c. Toilet and service area (should be included in each part)

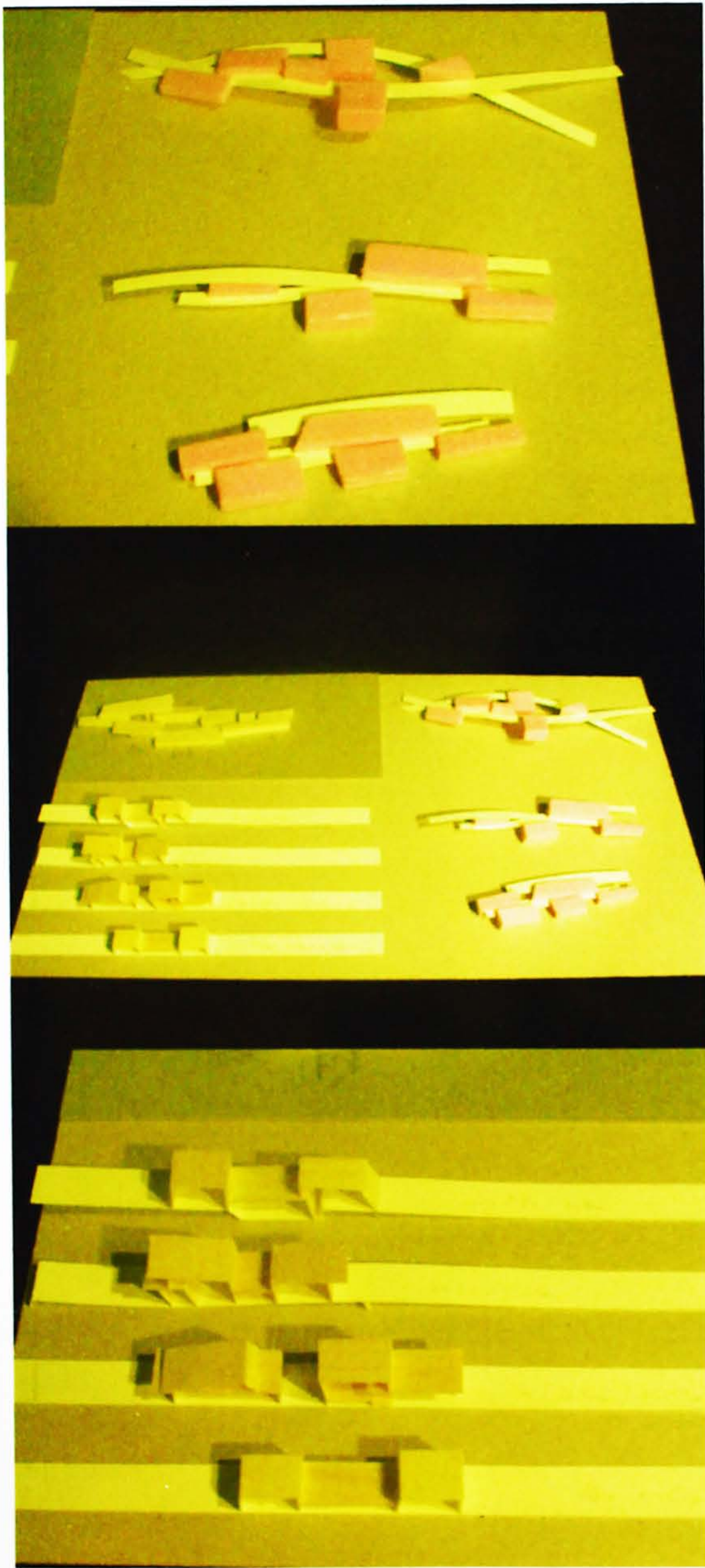
\* Paths for both pedestrians and bicycles to passing though the whole area



**Design development of detail design**

Same as massing scale case, model was used as the tool to explore the design in order to achieve the subtle design

Preliminary design



**06. Design**  
d. Design development  
of detail design



Design development of detail design

Further development of preliminary design

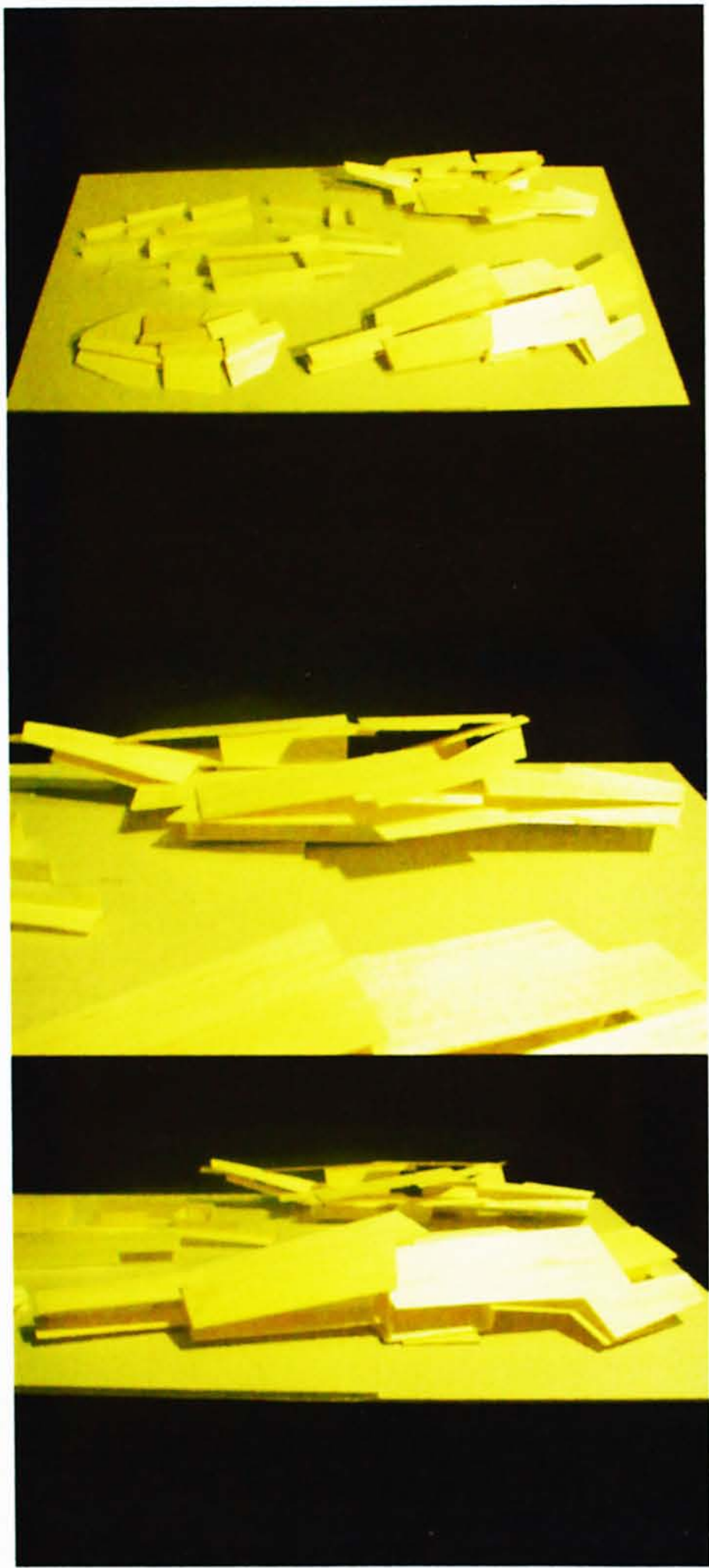


06. Design  
d. Design development  
of detail design



Design development of detail design

Further development of preliminary design

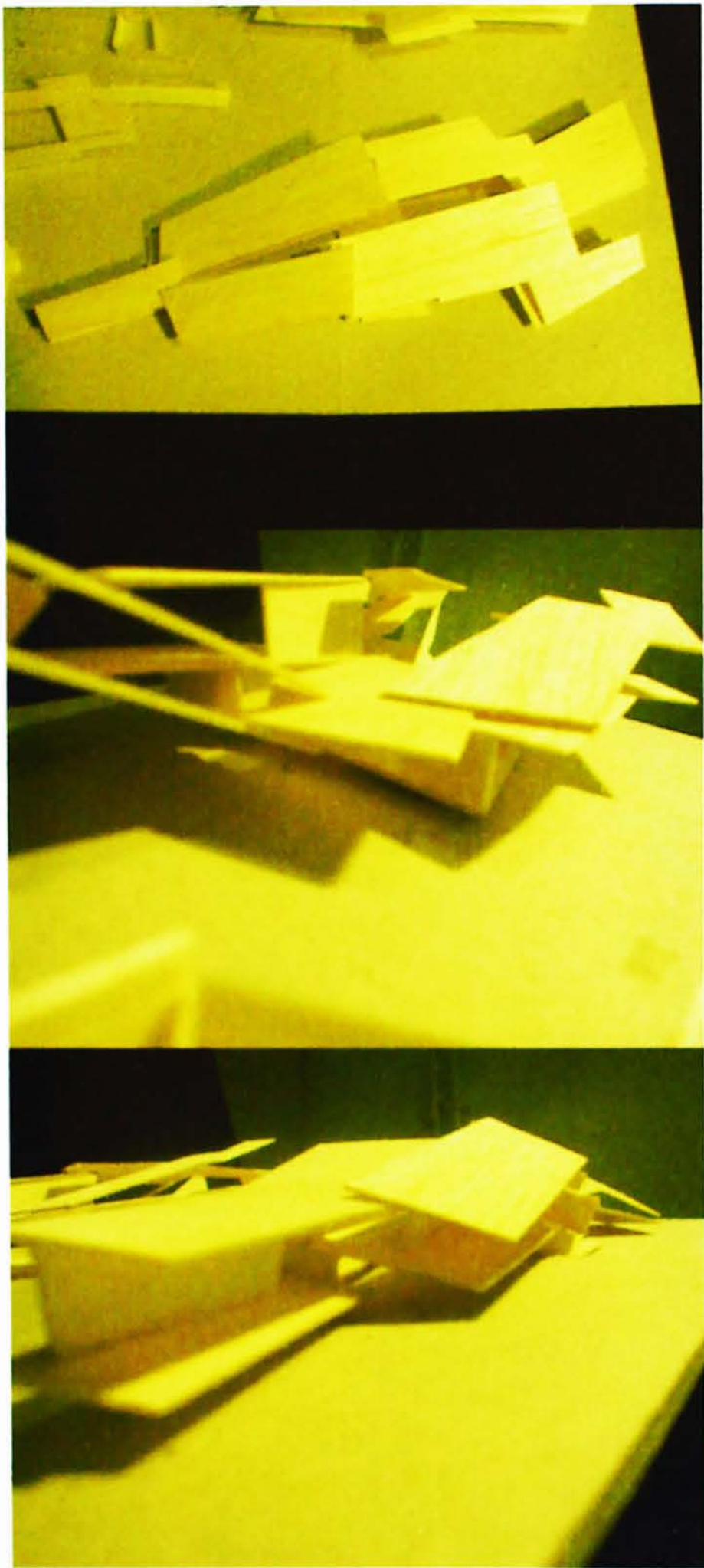


06. Design  
d. Design development  
of detail design



Design development of detail design

Further development of preliminary design

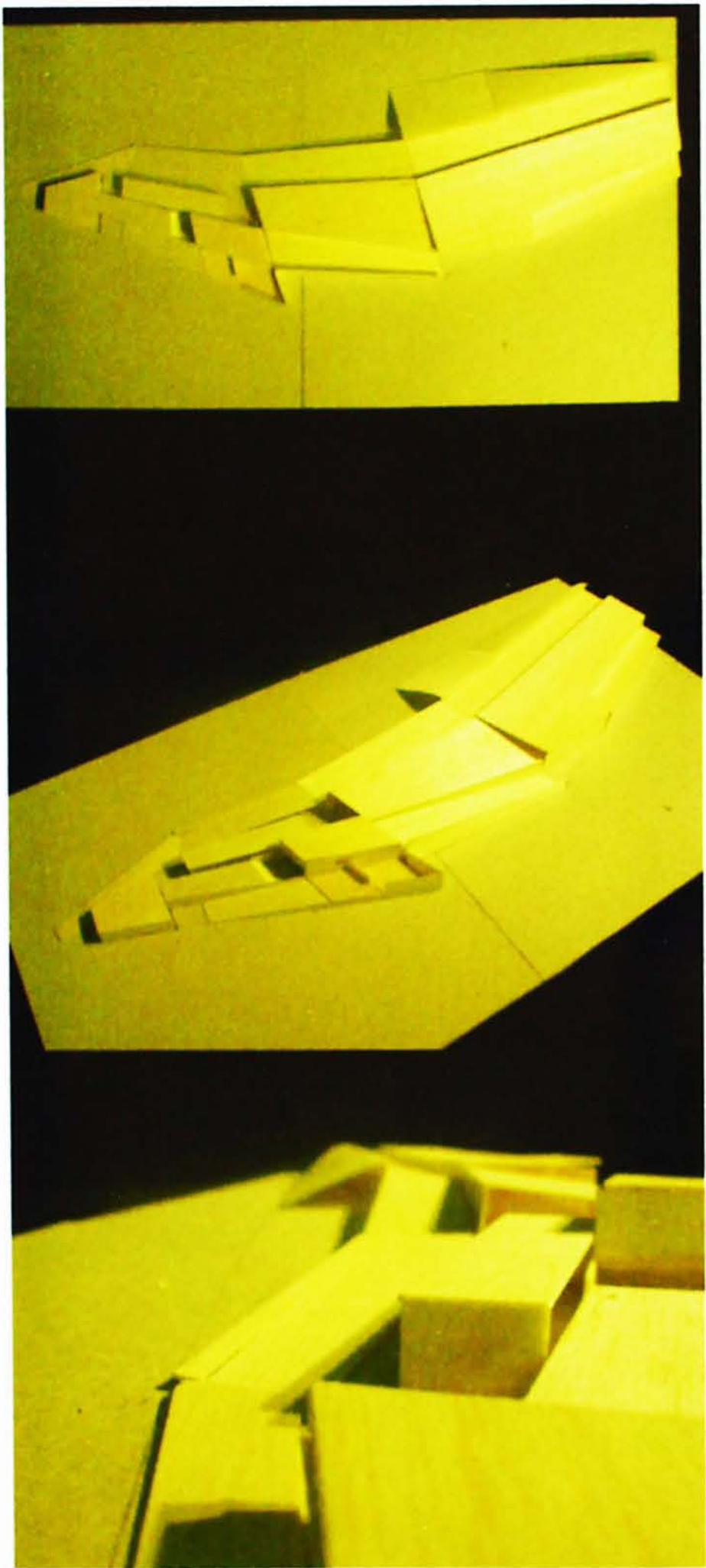


06. Design  
d. Design development  
of detail design



Design development of detail design

First option

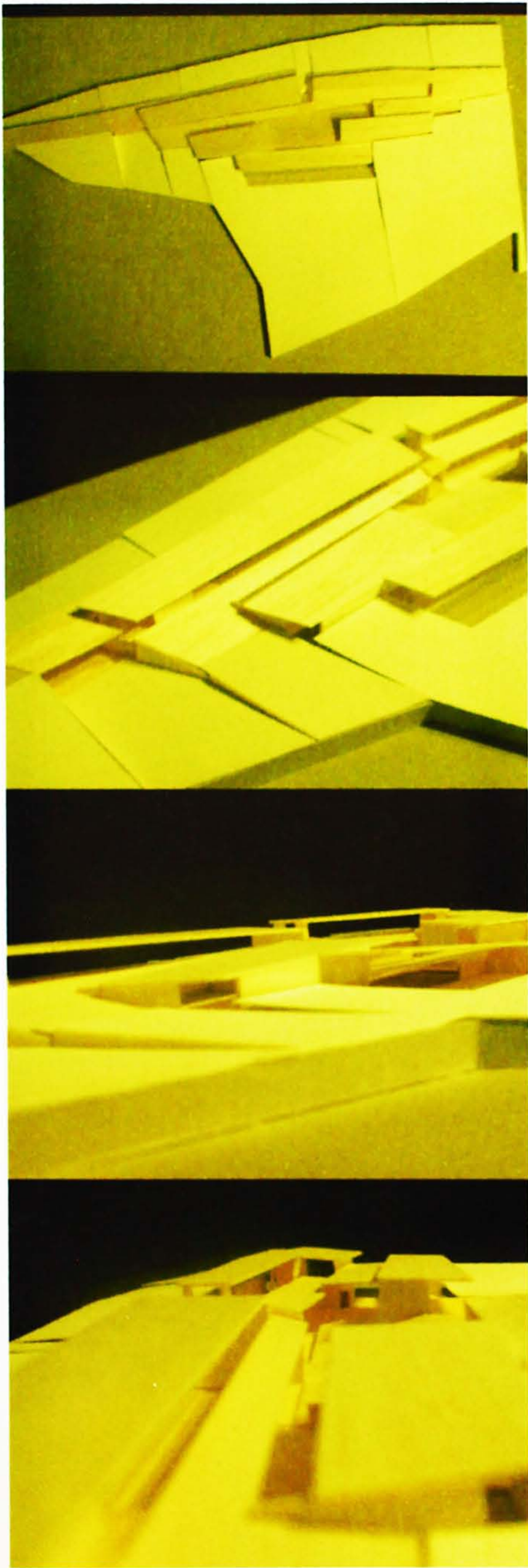


06. Design  
d. Design development  
of detail design



Design development of detail design

Second option

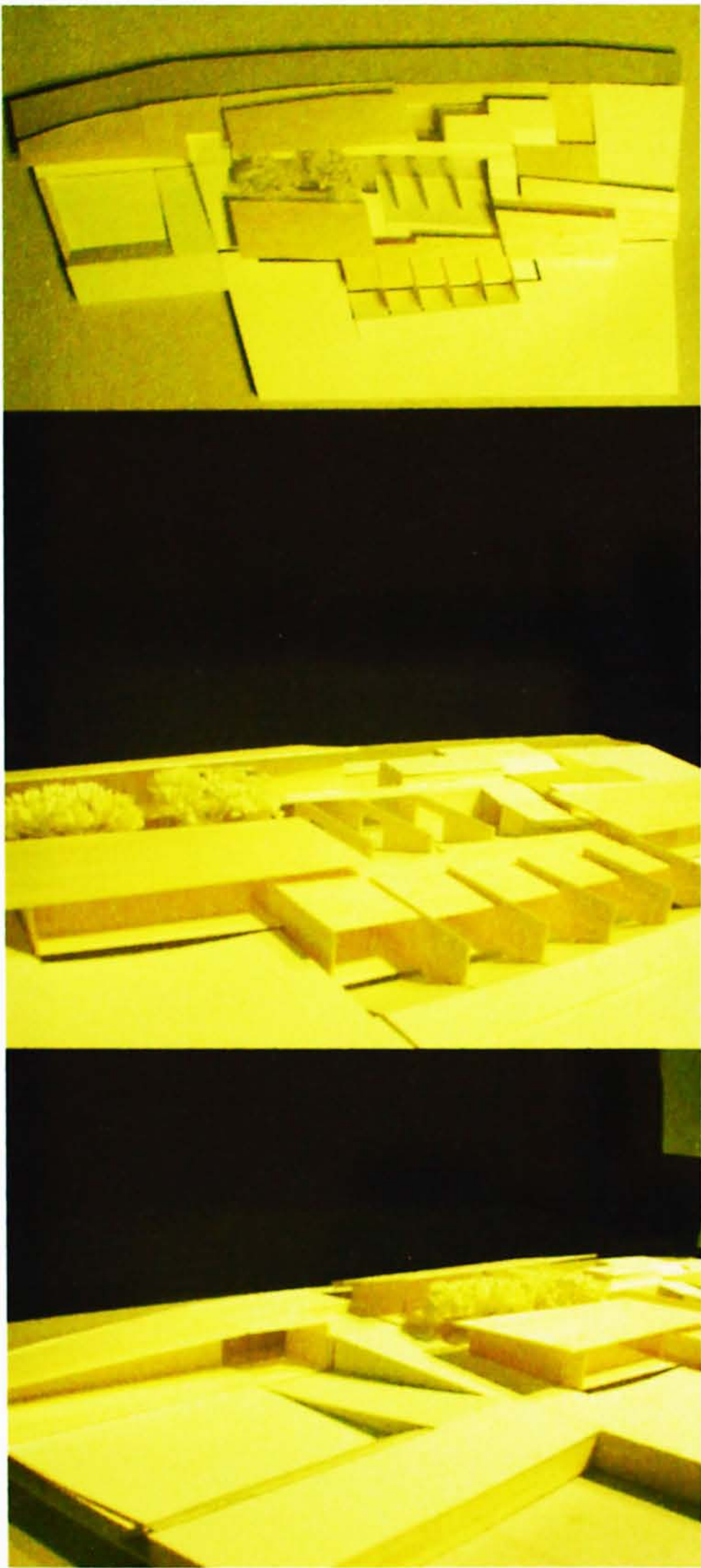


06. Design  
d. Design development  
of detail design



Design development of detail design

Third option

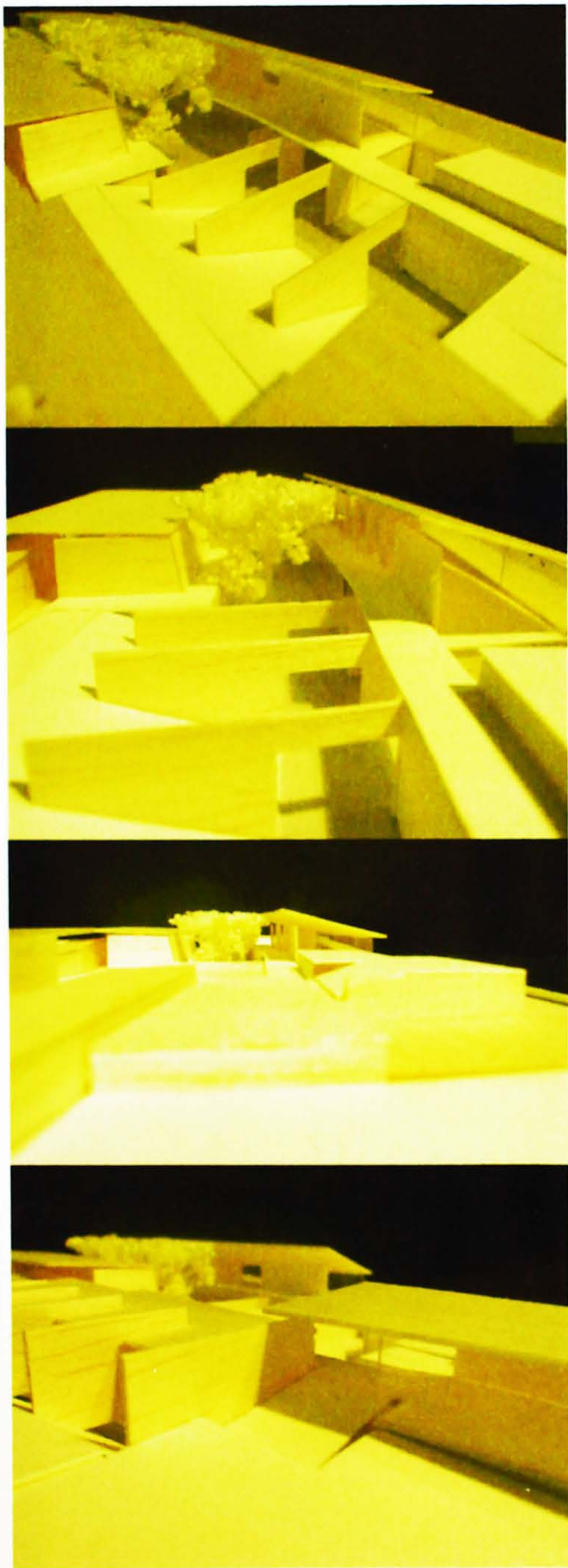


06. Design  
d. Design development  
of detail design



Design development of detail design

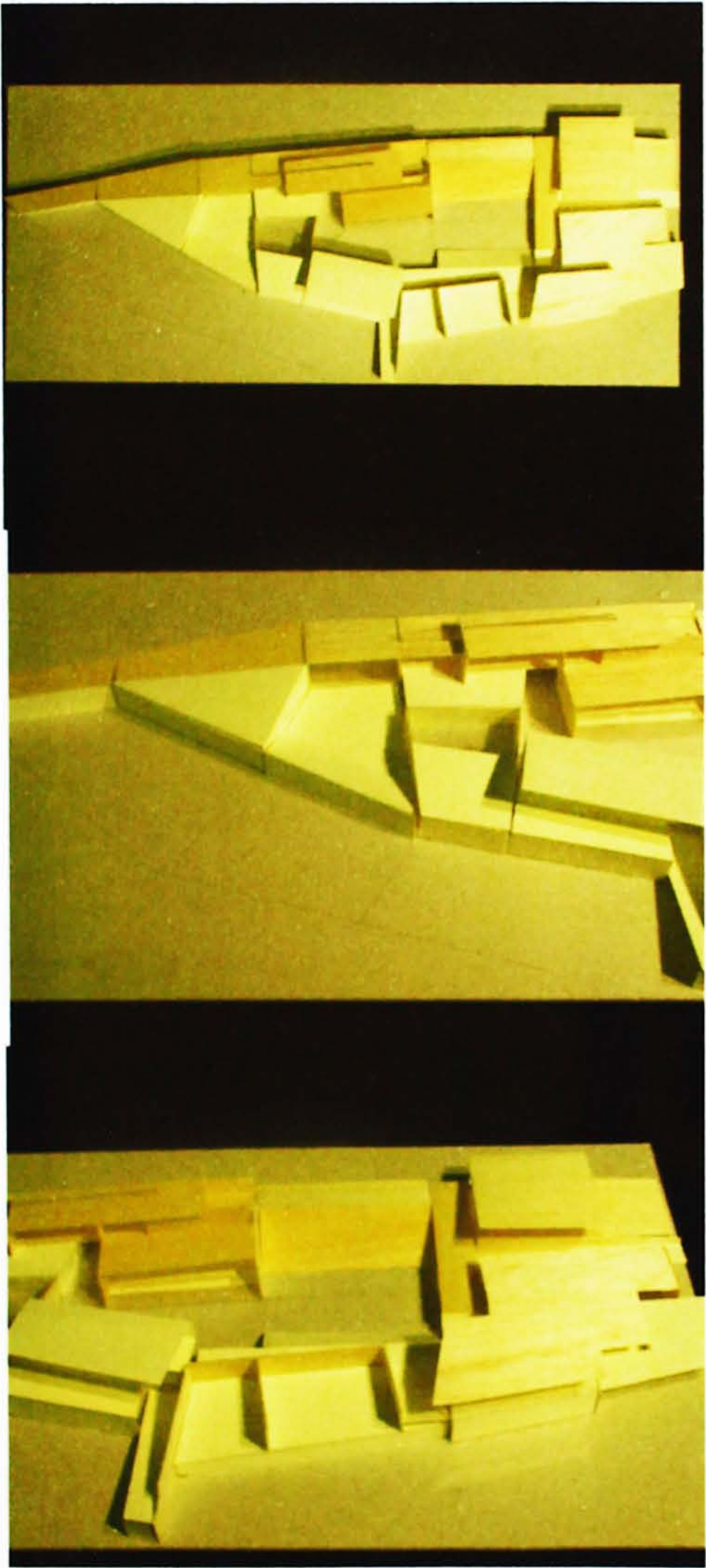
Third option



06. Design  
d. Design development  
of detail design



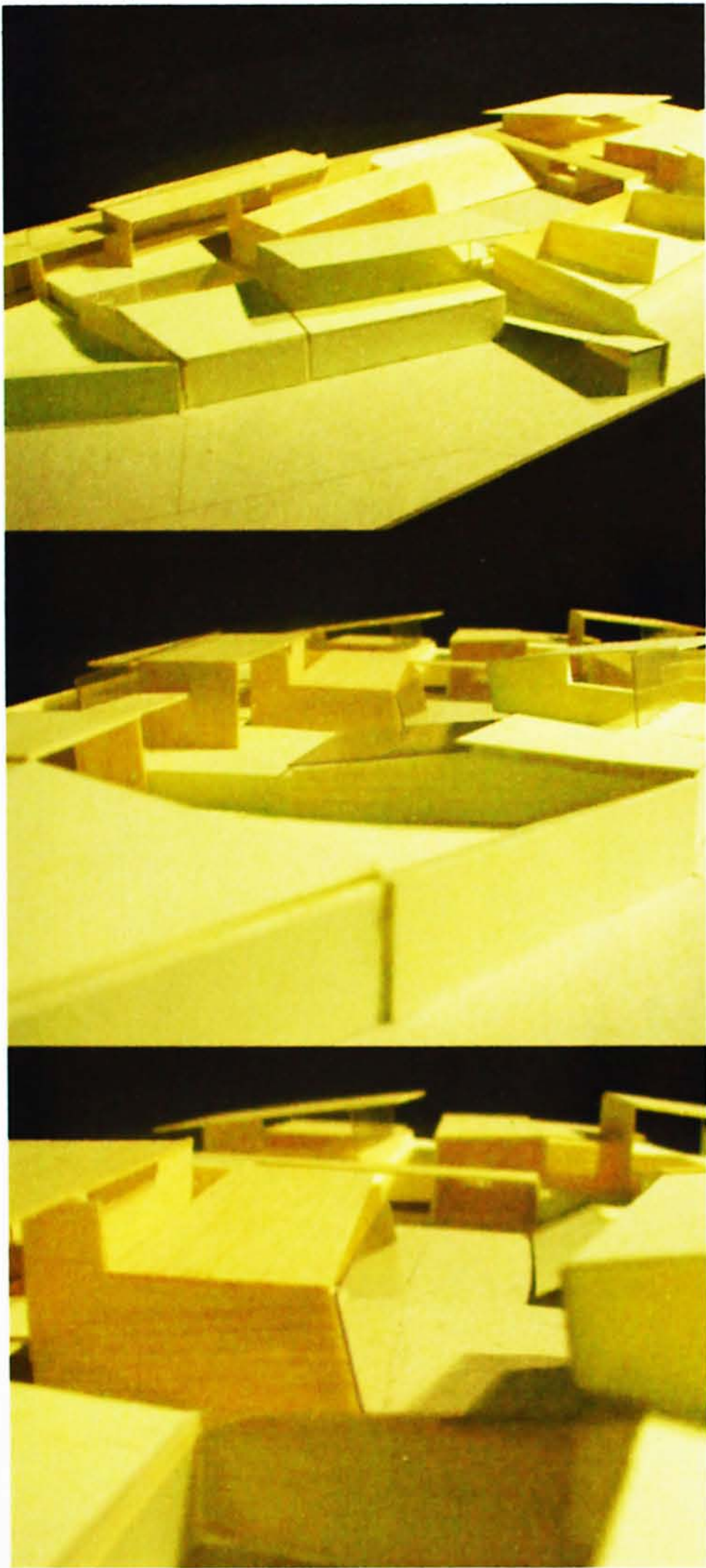
Fourth option



06. Design  
d. Design development  
of detail design



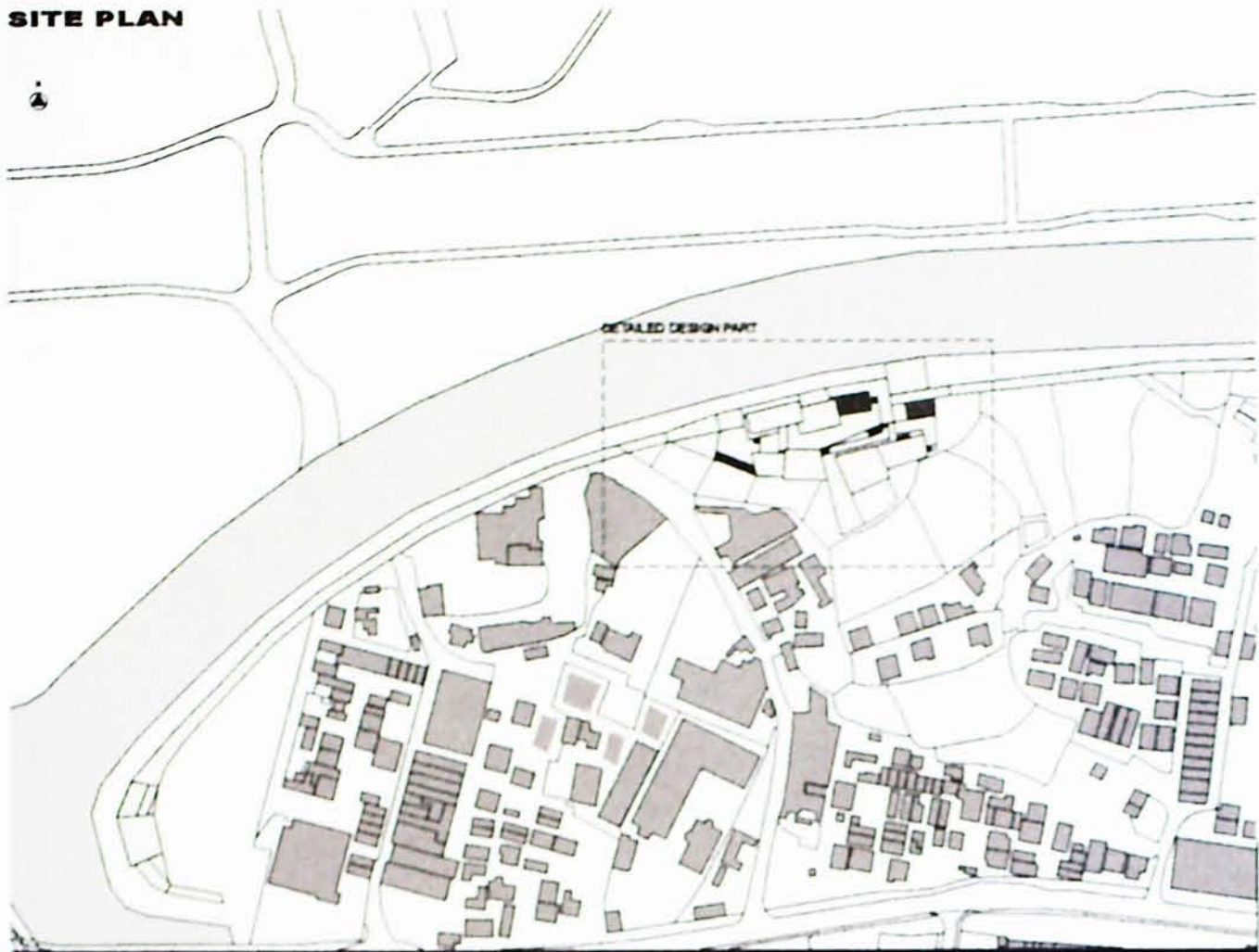
Fourth option



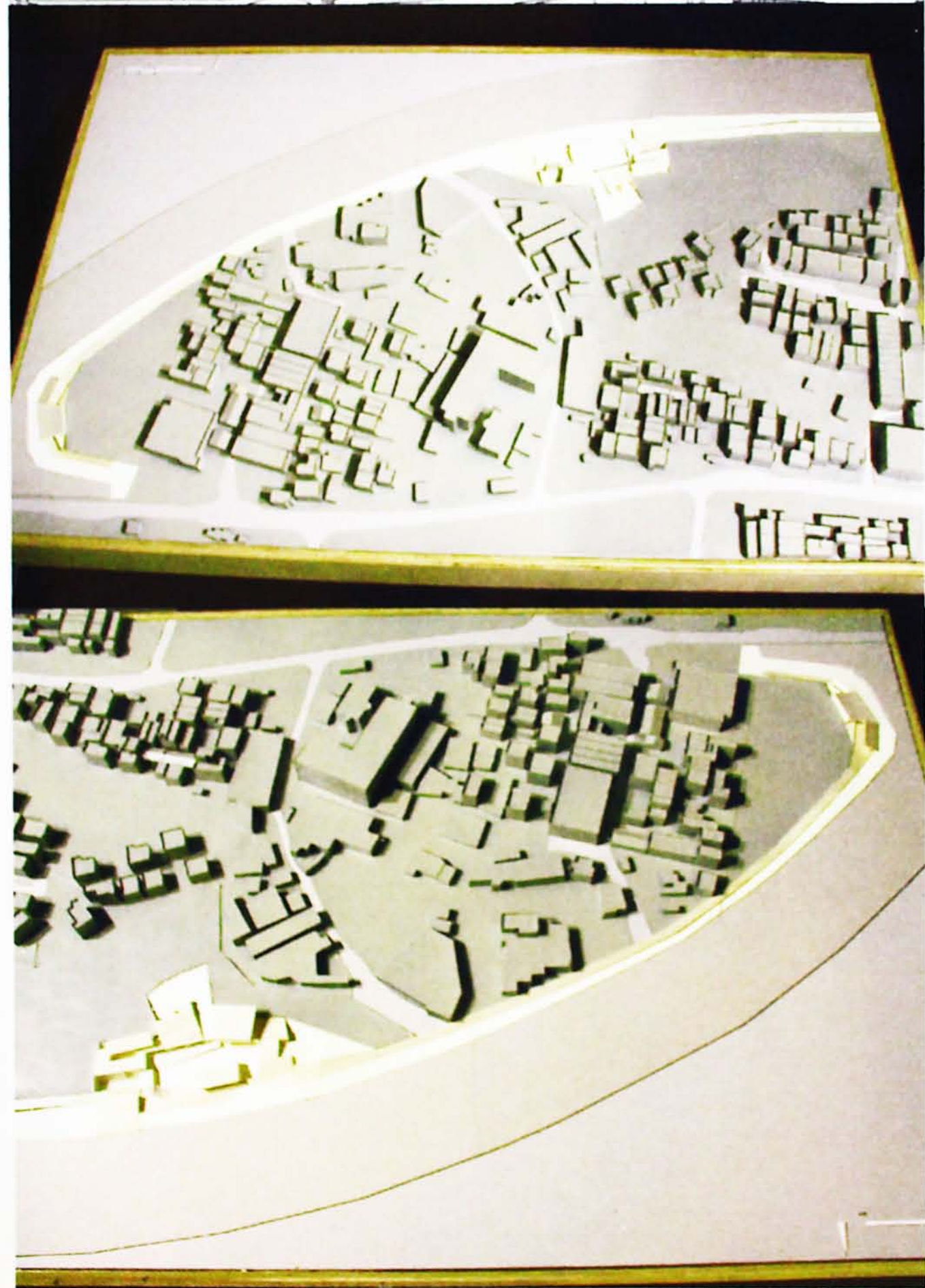
**06. Design**  
d. Design development  
of detail design



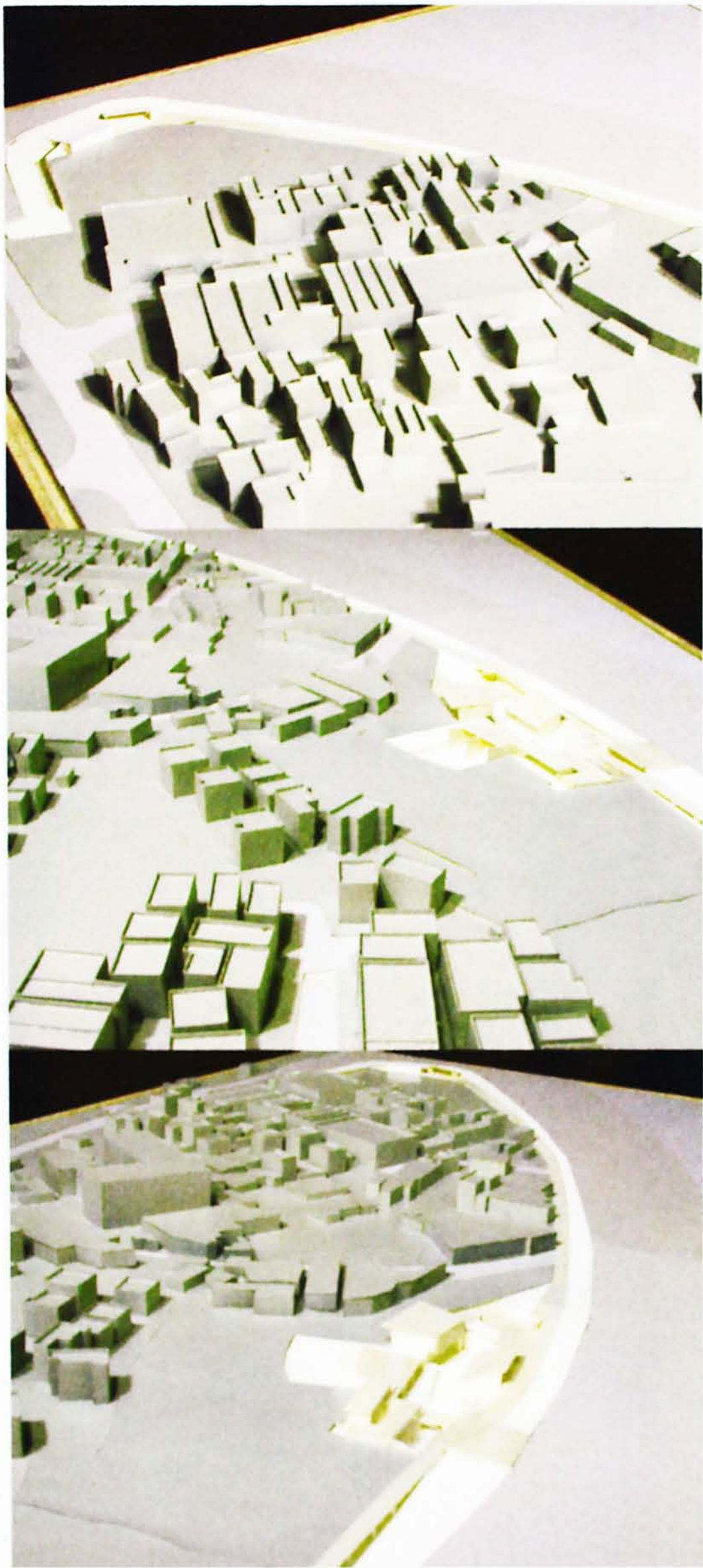
Final Design at the massing scale



07. Final Design  
a. Final Design at massing scale



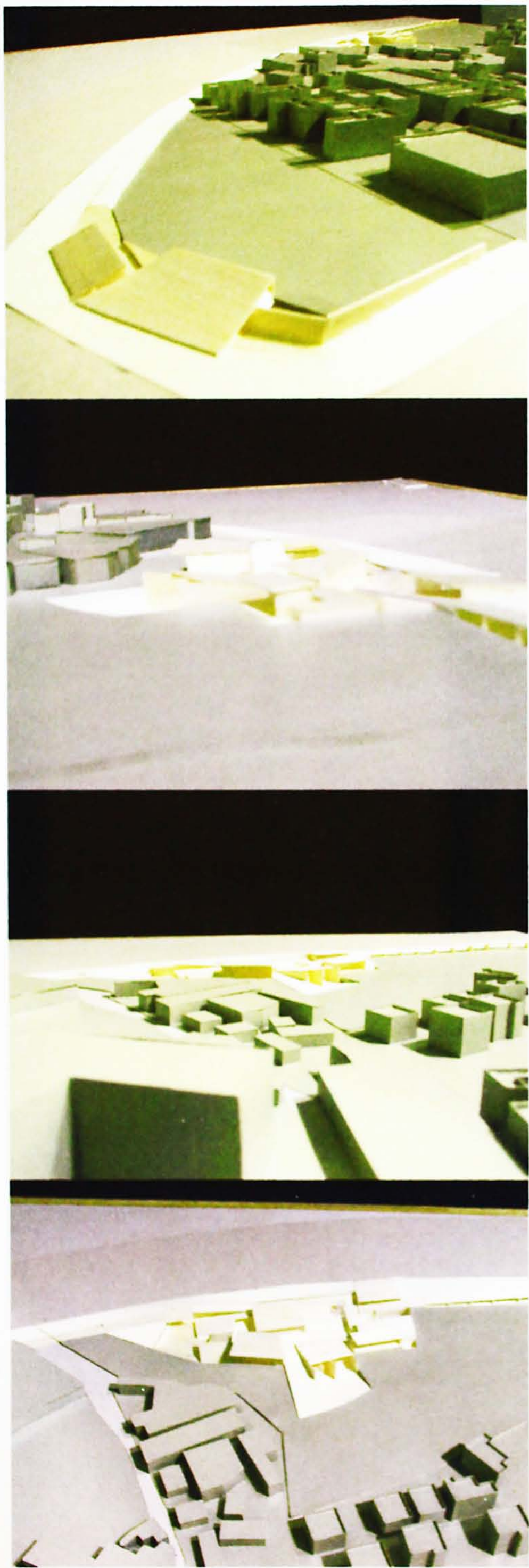




07. Final Design  
a. Final Design at massing scale



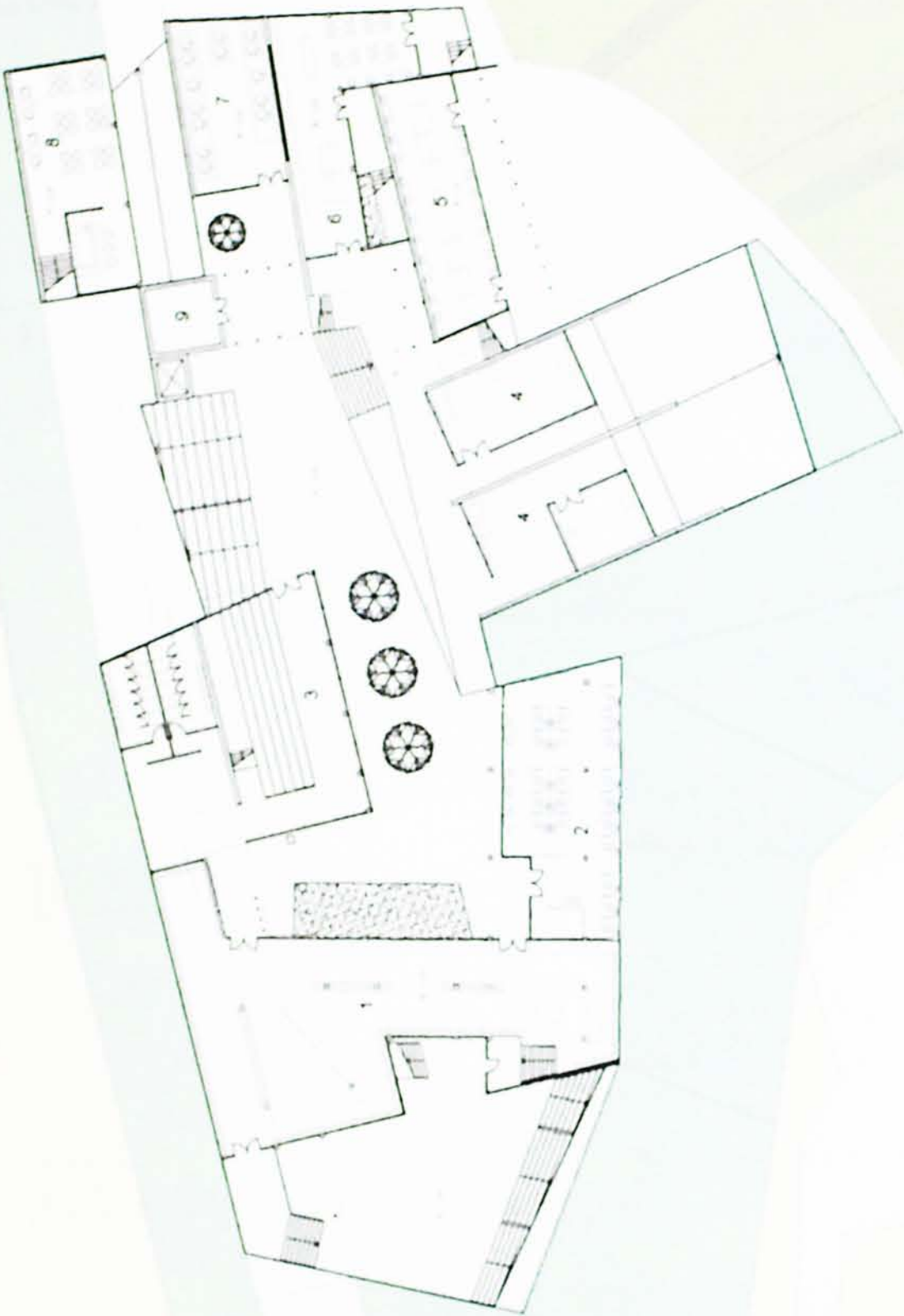
Final Design at the massing scale



07. Final Design  
a. Final Design at massing scale



GROUND FLOOR PLAN



**07. Final Design**  
**b. Final Design of the detail part**

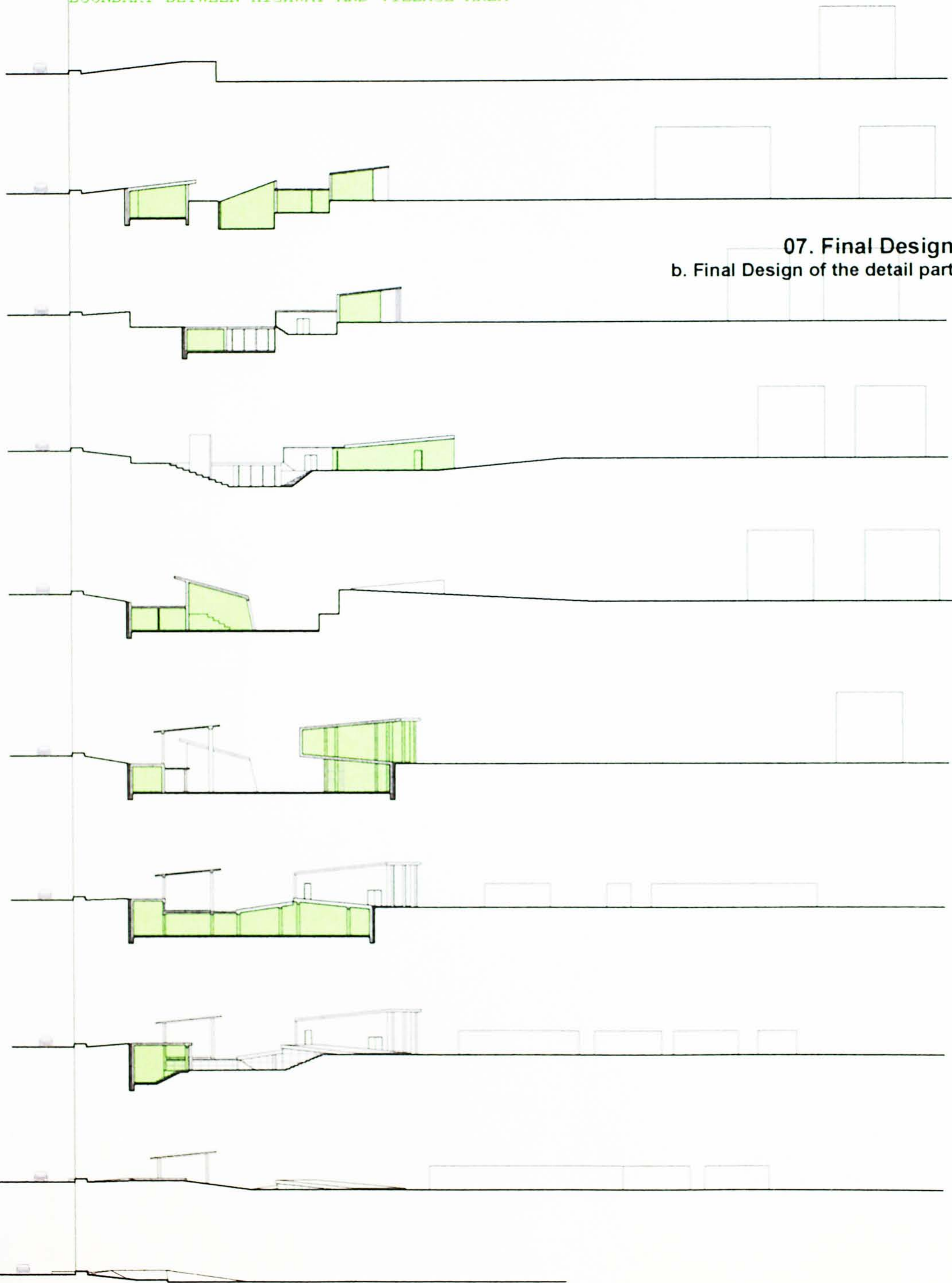
- 1 Gallery
- 2 Office
- 3 Video Room and Function Room
- 4 Practice Room
- 5 Library
- 6 Reading Room
- 7 Green House
- 8 Cafe
- 9 E & M Room



Final Design of the detail part

Series of section showing the subtle condition

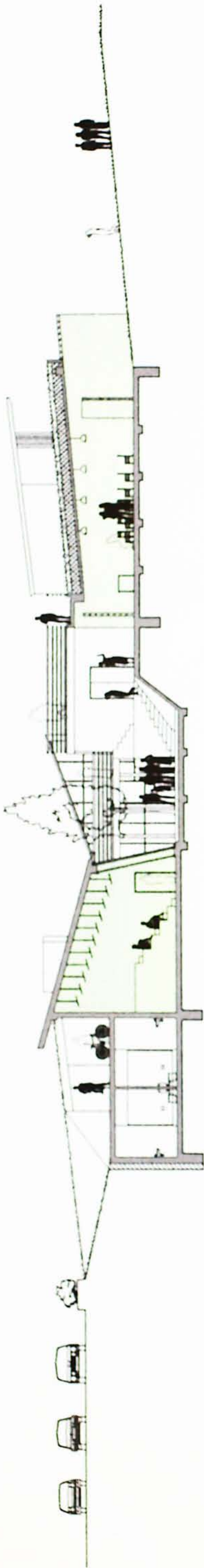
BOUNDARY BETWEEN HIGHWAY AND VILLAGE AREA



07. Final Design  
b. Final Design of the detail part



section of the farm house



07. Final Design  
b. Final Design of the detail part

section of the farm house

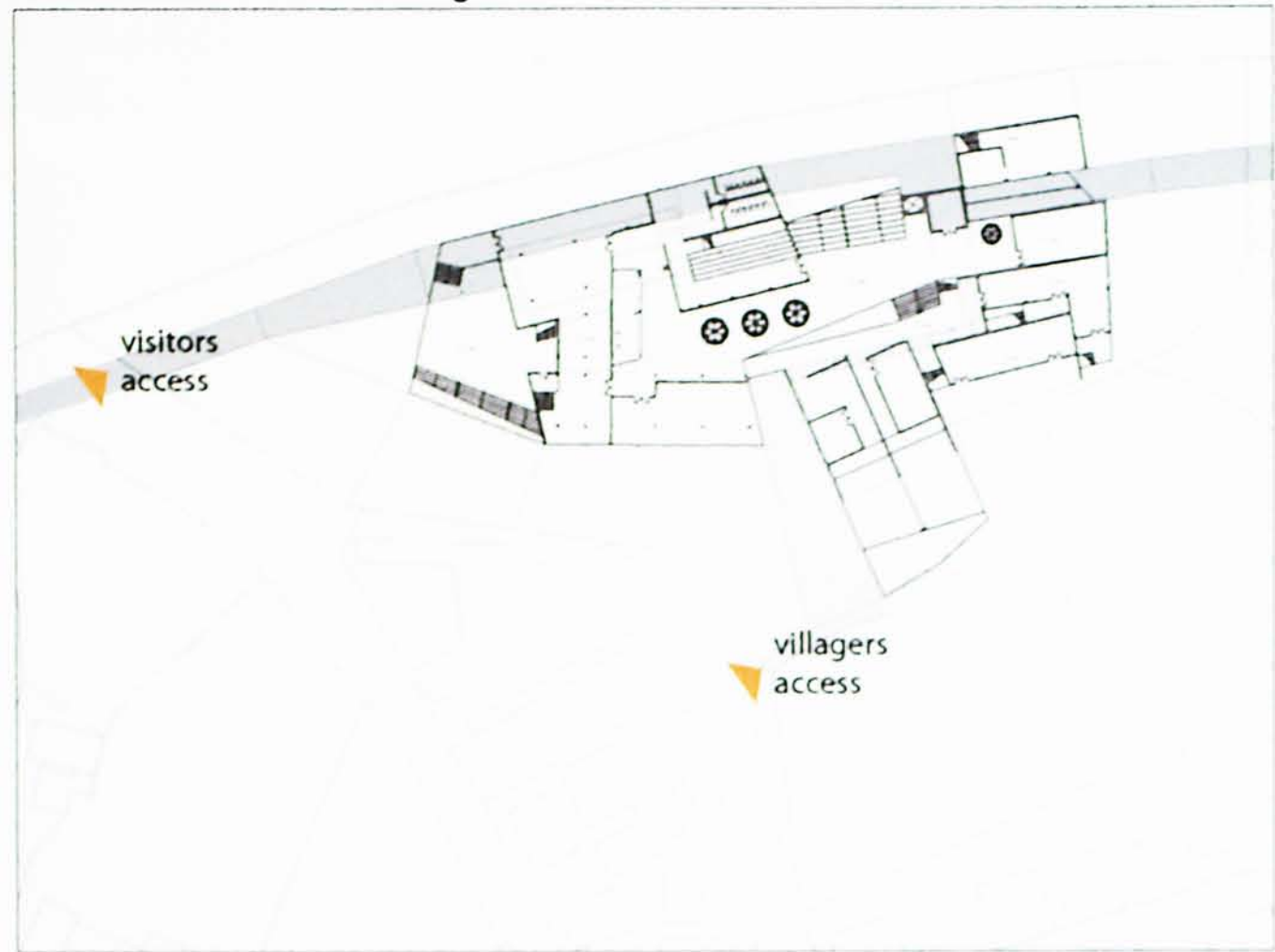


07. Final Design  
b. Final Design of the detail part



Final Design of the detail part

Path access to the building



07. Final Design  
b. Final Design of the detail part

Program arrangement



Final Design of the detail part

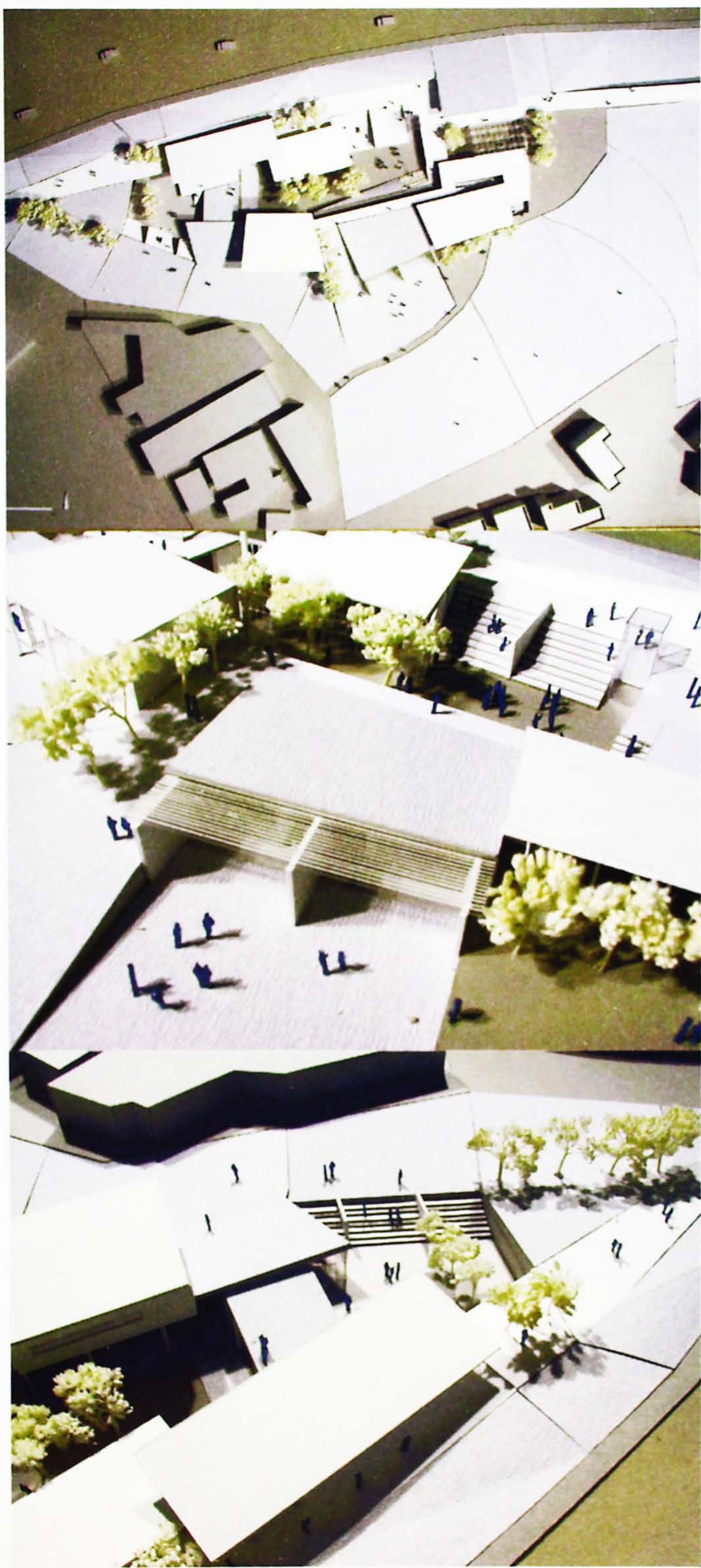


07. Final Design  
b. Final Design of the detail part





Final Design of the detail part



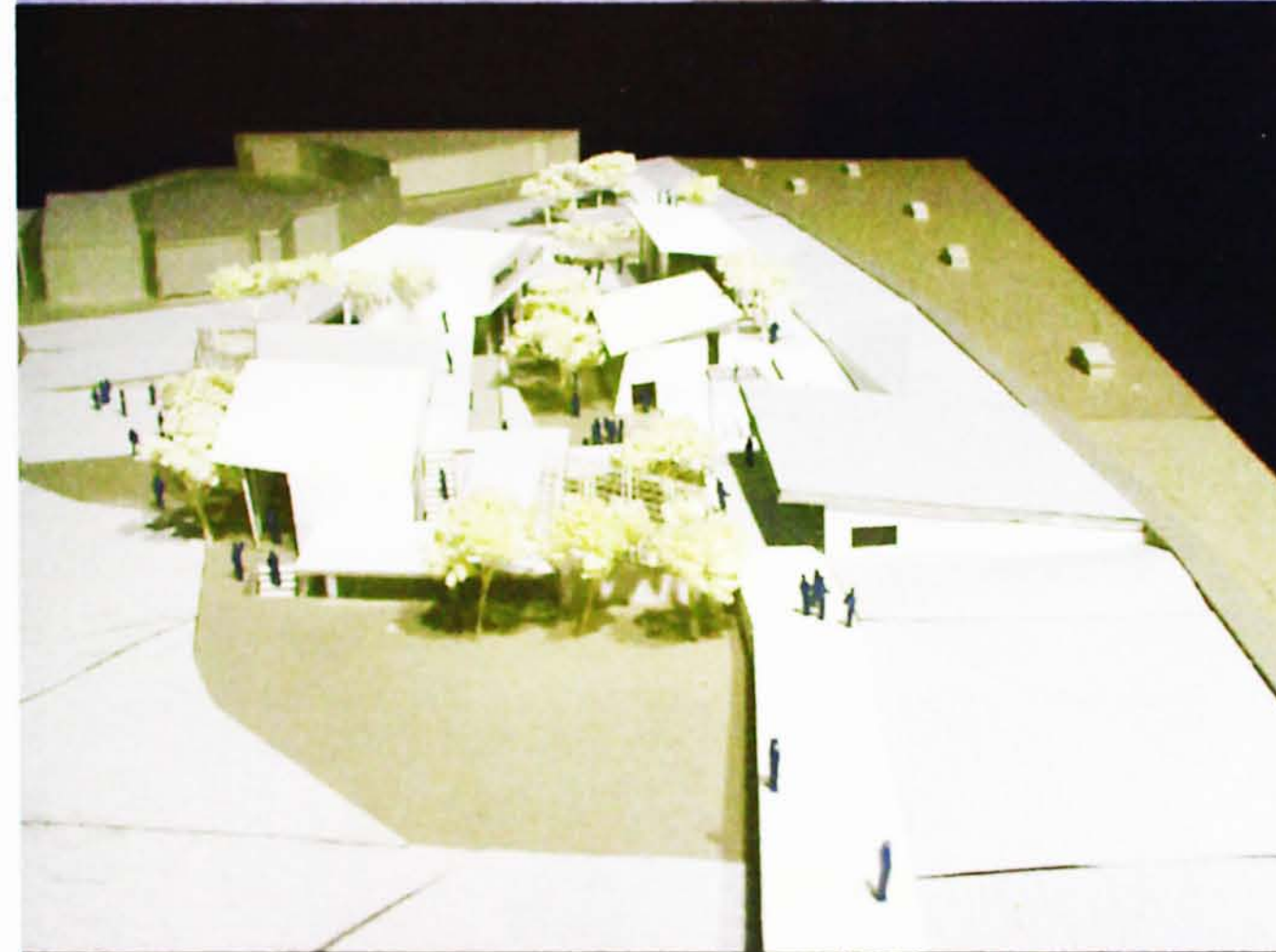
07. Final Design  
b. Final Design of the detail part



## Final Design of the detail part



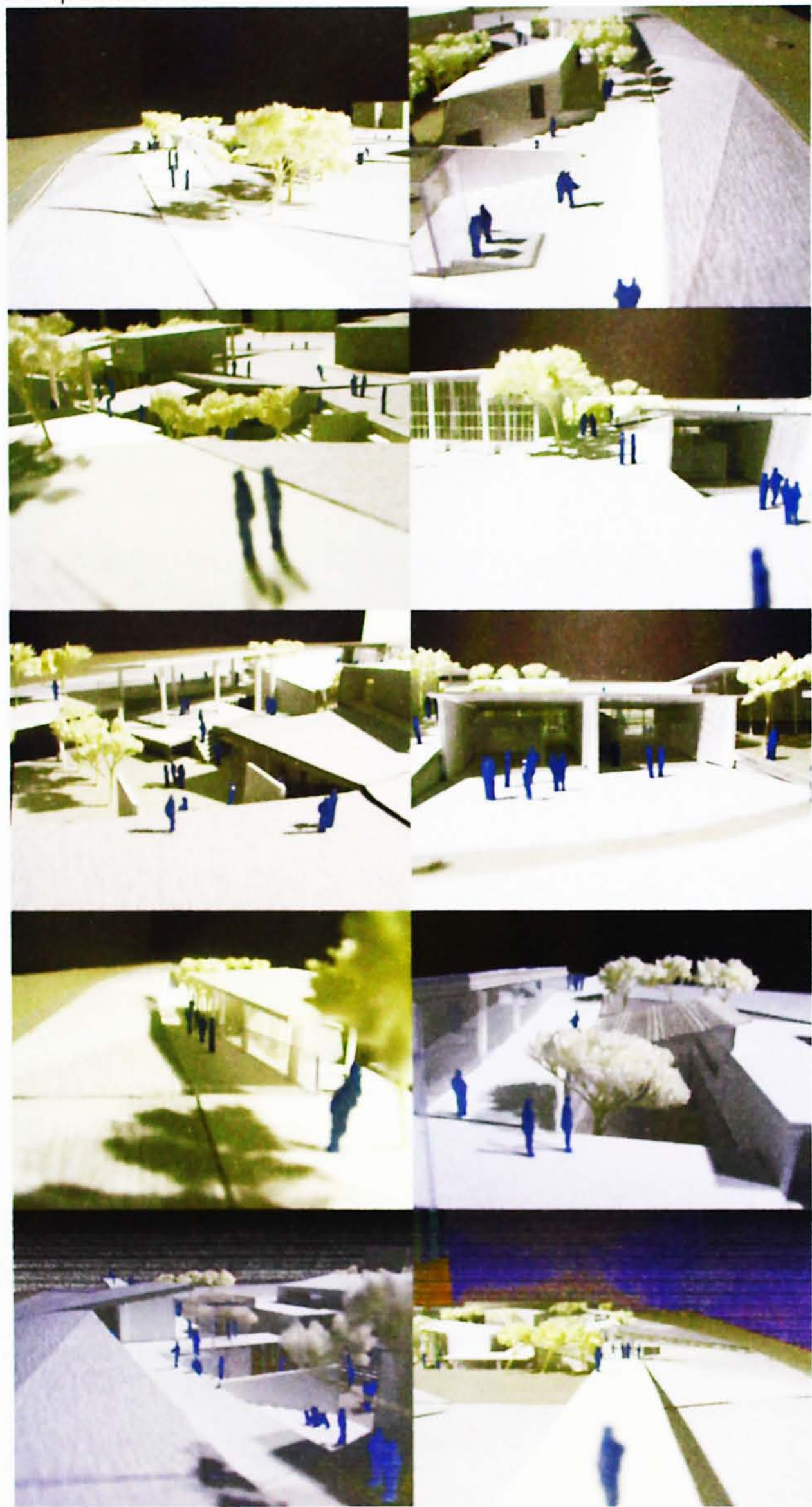
07. Final Design  
b. Final Design of the detail part





Final Design of the detail part

Perspective view



07. Final Design  
b. Final Design of the detail part



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